AMERICAN VETERINARY REVIEW.

NOVEMBER, 1896.

EDITORIAL.

UNIFORMITY OF STATE VETERINARY EXAMINING BOARDS.

At the Buffalo meeting of the Association of Veterinary Faculties of North America the above subject was very fully discussed, and the conclusion reached by the delegates of the various schools was that the State Boards should be organized as far as possible upon the same lines, that the requirements should be similar, and that the action of any single board should be recognized by the others. In this way a license obtained by an applicant would be accepted in any other State of the union having a similar licensing body, and the licensee would be admitted to practice by a simple endorsement by the resident board, without examination. This method, it was deemed, would as nearly approach the much-discussed "National Board of Veterinary Examiners" as it is possible to attain. It was shown that, with the exception of New York State, the requirements in all the other commonwealths (eight in all, we believe) are very similar, and steps were taken by the Faculties Association to endeavor to insinuate similar provisions into the laws of all States contemplating the enactment of such statutes. Now, the Empire State, in her efforts to secure protective laws for the veterinary profession, obtained more than she needed, much more than was good for her, and in consequence she must stand alone in the enjoyment of her stringent requirements, as the profession in other States certainly cannot afford to follow

her example. It was explained by one of the chief promoters of the act placing our colleges under the Regents and creating the Examining Board, that we were forced to accept this law or be content to again suffer defeat of our demands, and several of the members believed that an effort to modify the law now would result in an overthrow of the entire proposition. There can be no question but that the matriculation examination by the Regents is entirely too radical a departure from the past, that the elevation of the standard should have been more gradual. No one can be more jealous of higher education than the REVIEW, as will be proven by reference to its pages for the past twenty years; but there is a sliding scale between evolution and revolution, and if it were in existence our schools would have suffered less by more conservative action. If it really was a question of law or no law, there is no suggestion but that what we have secured is preferable to its absence from the statute-books. We do not feel justified, however, in advising other States seeking to secure legislation of a similar import to follow in our footsteps, and therefore New York must remain a stumbling block in the path that leads to perfect harmony and mutual recognition between the examining boards of the various States. It is probable that this cannot be avoided, and, therefore, we must make the most of it.

While a perfect organization cannot exist between these boards, it can be so with the exception of New York. Much good can be accomplished by them, and we strongly urge all members of the profession in States looking to the enactment of such laws to consult the bills that have been passed in other States and make theirs uniform in requirement, so that recognition of each other's acts can be easily accomplished.

FALSE REPORT OF PLEURO-PNEUMONIA.—The fool-killer would find very profitable employment if he were to visit the editorial sanctum of an agricultural journal called the *Orange Judd Farmer* and annihilate the individual who is responsible for having committed the very unpardonable crime of printing

the following announcement from Center County, Pennsylvania:

"One of the greatest scourges the farmers in this part of the State have had to contend with for some time is the great prevalence of disease among their cattle. Dr. Pearson, State Veterinarian, is kept busy trying to eradicate the diseases, but thus far has not succeeded. Tuberculosis and pleuro-pneumonia are the two worst. The entire reservation of young cattle on the Allegheny Mountains is afflicted with the latter disease and all have been quarantined. Over a hundred head have been killed and the carcasses burned."

Any one in the least acquainted with the history of contagious diseases in this country would not have had to await the very prompt and emphatic denial of the existence of a single case of contagious pleuro-pneumonia by Dr. Leonard Pearson, State Veterinarian of Pennsylvania, because the merest tyro in recent history would know that such an alarming occurrence as the reappearance of that loathsome malady in this country would have been heralded by a much more reliable carrier than the journal which is edited by some one who is utterly incapable of giving public utterance to any statement of importance. We hasten to emphatically assure the profession and public of this and every other country upon the face of the earth that no single case of pleuro-pneumonia contagiosa has appeared in Pennsylvania under any guise within a recent period.

THE ARMY BILL.—The following circular letter from the Committee on Army Legislation of the United States Veterinary Medical Association, has been forwarded to all known veterinarians in this country:

(Confidential.)

FORT MYER, VA., Oct. 17, 1896.

DEAR DOCTOR:—Accompanying this letter you will find some circulars clearly setting forth the condition of the veterinary profession in the United States Army and the great need for its improvement.

The United States Veterinary Medical Association has appointed the undersigned committee to take charge of this work, and we ask your active co-operation.

The Veterinary Bill was introduced last winter and was favorably reported, but owing to political complications we were unable to get it to a vote in the House of Representatives.

This winter it will be brought before the House early in the session, and we have every assurance of success, but to clinch this matter we must be vigilant.

A great election is at hand, and men who wish to be U. S. Senators and Representatives are seeking your suffrages. Call on them personally, or have your political friends call on them, before election and get their written promises to support this worthy bill, and send such promises to our Chairman, to assist him before Congress.

When Congress convenes in December, write to your Representatives and Senators and remind them of their promises. Please give this matter your early and vigorous attention. Yours for veterinary progress,

J. P. TURNER, *Chairman*, Fort Myer, Va.,
JOHN R. HART, 2577 Amber St., Phila., Pa.,
AUSTIN PETERS, Jamaica Plain, Mass.,
Committee on Army Legislation, U. S. Vet. Med. Association.

It was clearly shown before the recent meeting at Buffalo that the passage of this bill during the next session of Congress was almost certain if an earnest effort were made to accomplish it; it has been the basis of a great deal of hard work by this committee, as well as by previous committees; no other bill has ever before received the unqualified endorsements of the officials of the War Department nor a favorable report from the Army Committee, and no former bill was ever in such shape to become a law as this one. All that is now required is a long pull and a strong pull, and the position of army veterinary surgeon will be a post of honor and not a menial one of which all who hold them are ashamed.

Readers of the REVIEW, do not neglect the opportunity that is here presented to do yourself the honor of complying with the request of the Committee. Give a few minutes of your time to a work that this Committee is giving days to, and money besides.

A GOOD APPOINTMENT.—The Governor of Massachusetts has appointed John M. Parker, D. V. S., of Haverhill, a member of the Cattle Commission of that State, to succeed Prof. Lyman. Dr. Parker has for a long time taken a very active interest in the subject of tuberculosis, having given to the profession some very valuable contributions from his pen as a result of much original research and earnest thought, and his recognition by his State for a position which he is peculiarly fitted to fill and adorn is in the direct line of progress, as the recipient will take with him

into that important office an amount of enthusiasm and energy that will greatly second the efforts of the other members, and it will undoubtedly be a great addition to the cause of State control of contagious diseases of animals, for his work will assuredly result favorably to that proposition and will reflect credit upon the veterinary end of the Commission. We compliment the appointive power upon their wisdom, and the Doctor upon his opportunity.

OPENING OF THE NEW YORK STATE VETERINARY COLLEGE.—On September 26th the first session of this institution was opened to the public, and the event is of more than passing interest in that it is the first veterinary school in America established under governmental control. The event was characterized by a large attendance of friends and well-wishers from other departments of Cornell University, and a class of students which, while not large, bore evidence of being of the right kind. Prof. James Law, the principal, delivered a long and interesting address, going deeply into the history of veterinary medicine and the establishment of the earliest schools. The REVIEW will print the address in full in the December issue.

ORIGINAL ARTICLES.

DIABETES MELLITUS IN DOGS.

BY FRANK H. MILLER, V.S., BURLINGTON, VERMONT.

A Paper read before the United States Veterinary Medical Association, Sept. 3, 1896.

In my endeavors to contribute to the interest and success of this brilliant congress, composed of the foremost members of our beloved, honorable, and humane profession, I am from the very nature of my surroundings compelled to feel my incapability to present in a becoming manner for your consideration my observations upon a subject so beset with perplexities as that to which I am about to refer.

In speaking of "Diabetes Mellitus in Dogs," I simply take

dogs as representing those animals which I have had most occasion to study, not that I hold them to be those alone which suffer and die from this disease.

I am aware of the fact that some authors in the field of veterinary literature either dispute its existence or question its having been adequately demonstrated, while others, admitting its existence and after paying compliment to its infrequency, hastily dispose of the matter by adding that its true pathology is unknown.

Now, from a certain standpoint, these observations are as excusable as they are incorrect.

Writers in comparative as in human medicine all have used their own as well as the experience of their fellow laborers, but regarding this particular disease among animals there has been extremely little evidence of any value brought forward. The sole reason why there is not this day to be found in all standard veterinary text-books treating of internal diseases the most scientific treatise upon diabetes mellitus is that veterinarians as a great class place absolutely no value upon urinary analysis as a diagnostic medium. And this is true not alone in respect to this disease, but many others which we are called upon to treat.

Who, of all men who devote their lives to the study of the animal body and its phenomena, should so thoroughly grasp every available source of enlightenment as we who deal with fellow creatures wanting in power of speech intelligible to us.

Gentlemen, the day has passed at the house of scientific veterinary medicine when the clinical report of a sick animal is complete or in the slightest degree satisfactory without its relation to the proper urinary tests.

No, indeed, diabetes mellitus of the lower animals, and especially of our friend the dog, is neither such a rare disease nor one of which but little is known. It is true, the study of it has not up to the present day been able to satisfactorily clear up its entire horizon, but it has certainly shown some wonderful truths which must ultimately be fruitful in placing it in a clear light.

It has been my fortune to stand at one of the greatest poly-

clinics of one of the mother schools of Europe and glean knowledge and inspiration from their field, and during 236 clinic days there were established by systematic clinical examination six clear cases of this disease from among 6,104 small animals presented.

With your permission, I will submit histories of these cases so far as I have been able to obtain them, for, as you are aware, the despatch with which all cases must necessarily be handled when nearly 11,000 patients pass over the same examination table in the space of one year, is not conducive to long clinical records, but those more to the point. I have in all these cases seen the animals undergoing examination, and along with the report entered upon the register I have made personal visits to the various owners, that I might learn more fully the true states which lead up to the final disease of their animals.

Case No. 1.—Terrier, mongrel, female, 8 years of age, weighing about 10 lbs., owned by Frau Lili Straus, 40 Leipzig Street, Berlin, presented in Polyclinic Nov. 8th, when after the usual examination had been made the diagnosis of diabetes mellitus was given. There was 6⅞ per cent. of sugar found in the urine. No treatment was given and an autopsy was asked for, but refused. I some months afterward gained the following history from the owner, who had been in possession of the patient since the sixth month of its age; that it had always had good health until June, 1895. At the age of two years she had been "lined" and bore 3 healthy puppies at full time, and from that time she began to accumulate fat, notwithstanding a very nervous temperament and much exercise (which latter I found incorrect, as she seldom left the room except upon the lead line). Two and one-half years ago or thereabouts a tumor-like enlargement was noticed upon the second segment of the left mammæ, which grew slowly until it had reached the length of a finger and gave a knotty formation. The skin was adherent, but unbroken.

The first real evidence of ill health was increased thirst and appetite, accompanied by loss of flesh and diminished activity.

She had been fed on meat in great part with table refuse, and a fair amount of sugar and sweetmeats had been allowed. Urination became frequent, and later the ability to control its flow was lost. No vomiting nor diarrhœa was present. It was at about this stage that she was presented in the Polyclinic.

Prof. Eber remarked the tumor of the mammary gland and held the same for a malignant growth. He also pointed out beginning cataracts to the owner. After this date the symptoms grew more and more marked. She grew very apathetic. The food and water were taken in inordinate quantities, great emaciation, however, set in and there was almost complete paralysis of the *sphincter vesicæ*. Early in May paresis appeared, and later convulsive symptoms with loud crying and evidence of great cerebral excitement. Death took place in one of these somewhat remittent attacks. She had been totally blind for several weeks. The tumor had increased much in size, but showed no other change. No post-mortem examination was made.

Case No. 2.—Blue-black terrier, 14 years of age, male, weight about 9 lbs., property of Frau Krippendorf, 8 Schonholz Street, Pankow. The patient, naturally of lymphatic temperament, took but little exercise, and at an early date became too fat to ascend the stairs. The diet had been the usual table offal and meats, including a fair amount of sugar each day. For the past six years there had been difficulty in respiration, for which he had at an earlier date been seen in the Polyclinic, where he had been prescribed nitroglycerine in minimum doses with good effect. January last he was noticed to have increased thirst and appetite, when emaciation set in. He grew apathetic and drowsy. No paralysis was marked. Feb. 7, at this point of the case, he was examined in the Polyclinic for small animals, and after the usual examination was pronounced as diabetic, with 8½ per cent. of sugar in the urine. No medical treatment ordered, and autopsy sought but refused. Although put upon a thoroughly flesh diet, all symptoms had increased by early May to a point when his hind legs were very weak, and in the early part of June he lay partially paralyzed and totally blind, after first

having suffered an attack of what appeared to have been identical with the cerebral excitement of case No. 1, crying and rushing about the rooms. Along with the paresis was remarked facial twitching (epileptiform spasms) and semi-stupor. This condition continued for a few hours and was again followed by crying. At this point prussic acid was administered. No autopsy made.

Case No. 3.—This case, a 7½ year old Yorkshire terrier, male, owned by Lieut. Scharff, Spandau, was admitted to the ward for surgical diseases, February 18, 1896, under the request that the cataract operation be performed. The patient had been treated for polyuria in the Polyclinic two months previously, and since that time had developed double side lenticular cataract, and vision had failed, causing the owner to wish that an operation might be performed, hoping it might at least restore partial vision. He is in good flesh, food and water consumption has since his admission diminished. The visible mucous membranes are rose-red in color, and a slight serous discharge is to be seen at the eyes. The pulse's frequency is 120 in the minute, fairly strong and rhythmic. The cardiac impulse can be felt; abnormal tones cannot be detected. Auscultation of the lungs reveals normal vesicular respiratory sound. Temperature 39.1 degrees Cent. There is opacity of both lenses of the eyes and vision much disturbed. Urine of whitish opalescent character and of 1,044 specific gravity; albumen present in goodly quantities. No epithelium, nor other solid bodies. Grape sugar is present in abundance; another change to be noted was the somewhat increased quantity of chlorides and phosphates. Diagnosis: diabetes mellitus. Prognosis unfavorable. The operation was by reason of the elevated temperature and catarrhal symptoms postponed for a few days, and daily observation was made as to the sugar, when its quantity fluctuated upon a purely non-farinaceous diet from 7 to 8.2 per cent. Without material visible aggravation of the symptoms, the patient was, upon the 24th day, or five days after his admission, found dead in his cage. The official post-mortem examination was made Feb. 24, and the following report made:

"Poorly nourished terrier, male. Rigor mortis visible, but not marked. Both eyes are cataractous. In the free cavity of the abdomen is a small quantity of clear yellow fluid. The parietal and visceral peritoneum is pale red in color and smooth. Position of the viscera normal. The contents of the digestive canal consists of a small quantity of slimy turbid looking fluid. The stomach contains only a layer of mucous material. The mucous membrane of the rectum and the pylorus of the stomach is thickened and thrown into folds, which are upon their summits very red and injected. The spleen is brown-red in color, the pulp firm, and in cross section the trabeculæ are plainly visible. The liver is enlarged and of yellow-brown color, and in the middle of the enlarged acini one can define the central vein with difficulty, while the yellow outside zone appears quite diffuse. The cross section of the organ appears dry and glistening and of grey yellow tint. Microscopically one can discern that the hepatic cells are filled with small glistening fat droplets and pigmentary granules, the latter lying particularly toward vena centralis. Pancreas very small and dense. The kidneys are brown-red in color, capsules easily detached. The epithelium of the straight tubules is fatty, so much so that the latter give a pale striped substance. The mucous membrane of the bladder is covered with a layer of grey-red mucous. The mucous lining of the ureters is in a normal condition. The entire pleura is smooth and glistening. The cardial sack contains no abnormal fluid. The myocardium is somewhat soft and gelatinous looking. The lungs are black-red, thoroughly pervious to air and crepitate over all upon touch. In the sub-pleural interlobular and alveolar tissues are small air vesicles (emphysema). The mucous membranes of the upper air passages are normal. Brain to all appearances normal, but the meningeal vessels are much gorged with dark blood. Pathological diagnosis: Gastritis and proctitis catarrhalis. Fatty infiltration of the liver. Chronic tubular nephritis. Emphysema pulmonum. Cataracta bilateralis."

Case No. 4.—Patient a small white male spitz, extremely

fat, weight about 18 lbs., property of Frau Haymann, 23 Friedrich Street, Berlin, presented in Polyclinic for small animals, April 3, 1896, with the following history: That he caused annoyance by incontinence of urine (probably only polyuria), and was losing flesh, although he was taking great quantities of food and water. The examination revealed the presence of diabetes mellitus and poisoning was recommended, and autopsy asked for, both being refused. During the past July I sought out the owner and gained this further information: "The animal had been her property since its sixth month, and had, owing to the family habits, had but little exercise. The food used had been almost entirely cooked meats, some coffee and chocolate and other sweets in moderate (?) quantities and at irregular intervals. He had always enjoyed good health until one year ago, although a certain difficulty had been noticed in respiration, accompanied by cough, both seeming to be concomitant with an accumulation of flesh after adult life. One year ago, while in the country, he had over-exerted and became very warm, and lying in a damp cellar had contracted cold (pronounced by local talent 'distemper'), coughing was increased, wheezing, and discharge was noticed from the eyes. These symptoms in the main cleared up in a few days, but he failed in flesh, and the cough became more troublesome, and new symptoms appeared. He grew apathetic. Thirst and hunger became excessive, diarrhœa was also seen; polyuria and evident inability to retain urine beyond a very short time. Emaciation increased, and it was at this point that he was presented in the Polyclinic. From the time of his presentation he failed rapidly. While very much inclined to sleep, at no time was there a state approaching coma. Suddenly he was seized with what appeared to have been convulsions and crying loudly fell and was unable to use the posterior extremities. Although treated by a private veterinarian and somewhat relieved for a few hours, he soon began to cry again and was chloroformed without having regained the movement of the limbs, which were fully extended. He was said to be partially blind. There

was no vomiting and he took food up to a very short time before death."

(*To be continued.*)

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

FOOD—ITS ECONOMY AND WASTE.

BY A. S. HEATH, M.D., V.S., BROOKLYN, N. Y.

"The most economical food is that which is cheapest and at the same time best adapted to the wants of the eater."

This quotation is again made here to punctuate a valuable *truism.* Though we cannot breed domestic meat-producing animals without bones, yet, in the thoughtful economy of cookery, we can secure nutritious broths, or soups from the various percentages of waste of bone, gristle and fat according to the meats and vegetables used for family consumption; 8 to 10 per cent. in round of beef, 18 per cent. of a leg of mutton, 40 per cent. of chicken, and even a greater per cent. in some other meats and fish. Even these losses presuppose that all these have passed the conscientious inspection of the veterinary inspector. But for this guard against fraud, from bad quality, unhealthy or dangerous meats and fish, the percentages of losses in food values alone might have been far greater, not even calculating the dangers to health and life.

There are a few food materials that have no waste, such as milk, flour and bread; but all of these contain water to a considerable extent. Bakers' bread generally has too much water for food economy, amounting often to three times as much as the average 12 per cent. of wheat flour.

In consequence of an important matter about food—its digestibility—it is essentially necessary that our foods should be properly prepared and cooked. Of this some special consideration will be made.

The cost of bread is worth a brief notice. Bakers buy flour at about $4 per barrel. At this price for flour, bread costs about 1½ cents per pound for flour, ½ cent. for shortening and salt,

and add for labor, rent, fuel, interest, etc., 1 cent, would make 3 cents, leaving 2 cents for profit for a 5 cent loaf, or 8 cents for a 10 cent loaf, when used exclusively for the family, amounts to a large item in the expenses of the family.

As the food cost of the different nationalities was given in a previous article, no further mention need be made here.

It is our purpose to show the relative values of the different cuts of the several meats in the amount of the heat and muscular power yielded per pound of the kinds of foods consumed. By this means we shall see that the cheap meats are always the most nutritious. This excludes the extravagant fashion in marketing for the family. In order to make the amount of heat force or energy plain, we state that these are developed as the food is consumed. They are measured by *calorimeter*. The *unit*—the *calorie*, is the amount of heat which will raise one pound of water four degrees of Fahrenheit.

It has been estimated that the average amount of heat and energy in a pound of the several important nutrients contained in foods are :

In 1 pound of protein, in calories, 1,860.
In 1 pound of fats, " 4,220.
In 1 pound of carbohydrates, " 1,860.

It has been estimated that fats give 2¼ times more heat than either of the other food elements.

Thus : 1 pound of lean meat or white of egg is fairly equivalent to a pound of sugar or starch, and that about 2¼ pounds of either of these would be required as an equivalent for fat of meat or of butter.

Now, having briefly explained the estimates of food values in calories, we compare the relative values of the several foods and their prices in the same estimates of food calories. This will show the lack of economy in family purchases because of pride or custom. We shall also show that for lack of proper cooking there is an amount of wastefulness, very difficult to compute in the families of those who do the hard work of the world at low wages :

	Calories.		Calories.
1 pound of neck of beef yields	1,100	1 pound of salt mackerel yields	1,860
" " chuck rib " "	1,320	" " oysters "	230
" " rib " "	1,790	" " wheat flour "	1,615
" " sirloin " "	1,210	" " rye " "	1,625
" " corn'd flank " "	1,655	" " buckwheat "	1,605
" " roast should'r prk "	1,680	" " oatmeal "	1,850
" " fat salted " "	3,510	" " corn meal "	1,615
" " pork sausage "	2,065	" " potatoes "	375
" " bologna sausage "	1,015	" " sweet potatoes "	530
" " chicken "	540	" " cabbage "	155
" " turkey "	810	" " apples "	315
" " butter "	3,615	" " granulated sugar "	1,820
" " full cheese "	2,070	" " molasses "	1,360
" " codfish "	310	" " white bread "	1,280
" " shad "	745	" " Boston crackers "	1,895
" " salmon "	955	" " beans or peas "	1,600
" " salt herring "	1,345		

For all practical purposes, the list is long enough to show the relative values of the several kinds of foods, and that most of the cheaper priced foods are really the most nutritious, and when properly cooked, the most delicious. Besides, we shall see that there is economy in family cooking as well as in purchasing. And above all other considerations, there is a beautiful moral excellence in the genuine economy of the family housekeeping that reflects infinite credit upon the noble women who worthily preside over and administer the precious economies of the family, that nursery of true manhood and loving womanhood. To give the best possible benefits to the general—universal—family economies, education is the true essential. First common school education as now taught, and to which should be added kitchen education. For no woman can preside over a house who does not understand household economies. No matter whether she presides over a palace or a poor workingman's home. For from both of these homes come the sovereign voter, and the woman who wields a vast influence for good to the family, to the community, and to the State.

At present the education of American homes is far below the standard of excellence they might and should be. If civil service examinations were extended to servants, both male and female, the services of the homes would be surprisingly better than they now are.

These matters are not out of place in a journal of comparative medicine, as comparative hygienics are intimately associated with the food of the family.

But as I purpose to write an article on the "Happy Home," I shall conclude what I have to say on food, by stating that next to self-preservation, food is the next essential demand of life.

HEREDITARY INFLUENCE.

By Dr. W. Herbert Lowe, Paterson, N. J.

A Paper read before the Veterinary Medical Association of New York County, at the Academy of Medicine, Oct. 7, 1896.

The subject that I am to deal with to-night is one of far-reaching importance, both to mankind and to the animal industry of the nation, but I am afraid that the ladies of New York have stolen some of my thunder.

One day last week, after making some notes on the subject of heredity, I picked up one of the New York dailies, in which was an account of the organization of a society for the prevention of hereditary diseases, not by a body of veterinarians nor other scientists, who peep through microscopes on the hunt for bacilli. Far from it. The members of this new society are young and marriageable women, who solemnly promise not to become the wives of men who have any hereditary taint. The fact that a man is rich will make no difference whatever, or that he has curly hair or a "love of a mustache." He may go on his knees in supplication, but they will be inexorable and their hearts will be as hard as Bessemer steel. The object and purposes of these young ladies is highly commendable, and will certainly be of incalculable benefit to this and succeeding generations. If they propose to control and straighten out the undesirable love affairs of the world they have a very large contract on hand.

While marriages of persons affected with hereditary diseases are as a rule beyond control in the human family, and while any legislation by the state would be considered as inter-

fering with personal rights, yet with the lower animals the state can exercise the right of eminent domain and deal with disease as may prove to be for the common good.

It is not my purpose during the short time that I shall occupy your attention to give an extended treatise on the various laws governing the transmission of hereditary qualities and characteristics from parent to offspring, which facts are well known to the representative body of scientific veterinarians that I have the distinguished honor to address to-night, but rather to show how by a practical application of these laws, strong, healthy animals with stamina and constitution can be bred that will possess a decided disease-resisting power or immunity. Heredity plays an important part in predisposition and in immunity.

It is well-known what the trotting-horse breeders of this country have accomplished in breeding for speed. It is equally well known what the breeders of the various breeds of cattle have accomplished when breeding for special purposes. Much has also been accomplished in the same way with the dog and other domestic animals. I am sorry to observe, however, that in not a few instances these results have been obtained at the expense of substance and stamina. In the case of horses, many faulty conformations of body and limb are transmitted that predispose to disease and lameness, as the animal reaches maturity and is put to work or in training. Many so called excellently bred young horses with fine pedigrees are sold every spring and fall in the great sales at the Madison Square Garden and elsewhere in this city that inherit some defective conformation or predisposition to weakness, lameness and so on, which will be developed when the exciting cause makes its appearance. Breeders of pedigreed horses are well aware of this fact and do not wait for the unsoundness to develop, but rush them to the sales referred to.

In this connection I wish to emphasize the fact that many diseases are to be classified as hereditary when in reality it is the predisposition that is hereditary, which may be a peculiar diathesis, but it will be found upon close study and observation to be due to defective or faulty conformation of body and limb.

Every kind of unsoundness, especially those which are of a constitutional character, as well as defective conformation of body and limb and faulty action, should be excluded by the breeder. It is only by a systematic method of exclusion and careful selection that the best results can be reached.

Stallions that have been excluded from European show yards on account of some constitutional or hereditary unsoundness have been known to have been imported into this country and exhibited here and even placed on the prize list.

I mention this to show the importance of proper veterinary inspection of horses before being eligible to receive any prize. A system of veterinary inspection at horse shows and state fairs would prove of distinct and far-reaching value to the horse-breeding industry of the United States.

What the trotting-horse breeders of this country have accomplished is the wonder and astonishment of the world, but in their enthusiasm to produce speed they have followed in many instances pedigrees without regard to stamina and hereditary disease, and consequently we see many beautiful young colts breaking down in training. If breeders would only be as careful to exclude pathological defects and faulty conformation as they are to secure choice strains of blood, there would soon be great improvement in quality and stamina, that would be of lasting benefit in the equine race. Stallions should be examined as to soundness, taking into consideration ancestral hereditary conditions. If stallions were required to have a license, those calculated to deteriorate the breed could be excluded from stud purposes.

We all know that in time of war a city that is not properly fortified is easily taken by the enemy. So, the animal body, if not fortified with a strong constitution and stamina, will be readily invaded by the micro-organisms of infection. The proper pabulum or soil for the development of microbes is only second in importance to the microbe itself. All persons exposed to infection of tuberculosis, small-pox, or scarlet fever, do not take the disease because all are not alike susceptible. All men

that eat the flesh or drink the milk of tuberculous cows do not contract tuberculosis. Whatever in any degree weakens or impairs the system of men or animals renders them more liable to the invasion of disease. The animal that inherits a strong, untainted constitution and good health from its progenitors possesses a disease-resisting power that often means an immunity. If this principle of heredity was kept in mind in breeding dairy cattle there would not be so much tuberculosis. Environment, sanitary conditions, climate and food have of course all more or less to do with development of tuberculosis, but on this occasion we will confine ourselves to the hereditary transmission of weak and impaired animal bodies from sire and dam to offspring which are evidently more susceptible to tuberculosis than animals that have inherited plenty of substance and stamina. To this phase of the subject I attach a great deal of importance, for I believe that it is only by a system of breeding, founded on a scientific knowledge of the laws governing heredity, that tuberculosis will be eradicated. The fact that tuberculosis is caused by the tubercle bacillus and is therefore not hereditary does not lessen the importance of breeding dairy cattle having substance and stamina sufficient to resist the development of the micro-organism.

The etiology, diagnosis and pathology of bovine tuberculosis are now well understood by the profession, but when we come to take steps to eradicate the disease economic limitations and other questions arise. Dr. Salmon, the able Chief of the United States Bureau of Animal Industry, estimates that to make one inspection and test all the cattle, killing affected animals, would in the State of Pennsylvania alone cost over five million dollars. He suggests a more conservative and less expensive method by co-operation between the farmer and the properly constituted State authorities. Whether the so-called radical method or Dr. Salmon's more conservative method of stamping out the disease be adopted, a new crop of the disease would soon again appear which would necessitate another inspection and further expenditure of money unless something

further is done than destroying affected animals and adopting sanitary measures. What is the practical use of destroying the animals now affected in a given state if we are at the same time breeding and raising young cattle, which when they are developed and forced to their full milking capacity will not be able to resist the dreaded micro-organism?

In the eradication of bovine tuberculosis the question of property, animal and human life are all at stake, and if the desired result can be accomplished more readily and more completely by a practical application of the laws governing the transmission of hereditary qualities and characteristics, we are certainly taking an important step in advance. The work of extermination in various localities and states has been well done, and the sanitary regulations adopted effective, but I would go still farther and breed dairy cattle that would inherit such constitution, stamina and vigor as to have a practical immunity from an invasion of the bacilli of tuberculosis when exposed to the germs. If some steps are not taken in this direction we will find that in the course of a few years another crusade against the disease will have to be waged at great cost to dairymen, farmers and the State. The remedy is in our hands if we only apply it. In the first place it will be necessary for the breeders of dairy cattle to understand the importance and value of this phase of the subject, and that the remedy is at hand, if they will recollect that "like begets like," and breed only from the class of animals already alluded to.

I have made this subject a matter of close observation and study among native and imported cattle for several years.

During the two administrations that I had the honor of representing the United States Government as the veterinary officer of this great port of New York I had an opportunity of seeing and watching almost every known breed of cattle now extant in the civilized world. All importations from foreign lands were held in quarantine under our Federal law for a period of ninety days, during which time they were under close observation. Change of climate affected some breeds more than

others, and, other things being equal, those of a delicate constitution and stamina were most affected by the changes, climate, food and environment. We, of course, admitted no tuberculosis nor other contagious disease, but some breeds, as for instance the Normandy, were of good constitution, stamina and disease-resisting power, while others, as some strains of the Jerseys, were very fine and delicate, and to my mind it would be only necessary to introduce the germ of tuberculosis to have the disease developed and established in the system.

INDIGESTION OR DYSPEPSIA.

By William Gall, V.S., Mattawan, N. J.

A Paper read before the Veterinary Medical Association of New Jersey.

Definition.—A functional derangement of the stomach without any appreciable lesion of inflammation.

Etiology.—Predisposing and exciting. Predisposing causes: Close, unhealthy, ill-drained, ill-ventilated stables, atmosphere of some factories, hereditary or other constitutional defects, influence of atmosphere of particular climates and localities, exposure to unhealthy exhalations, impure water, and water impregnated with mineral salts. Exciting causes: Irregularities of diet, indigestible food, cooked food, imperfect mastication, long fasting, exhaustion, sudden change of feed, too much feed given at one time, certain descriptions of feed (as wheat, barley, corn meal, musty oats, bran, and green-food when eaten immoderately). In young animals when they are allowed to suckle the dam when she is heated. Sharp and projecting teeth are probably the principal causes of indigestion. In many of our large stables it is due to the irregular manner in which horses are fed and watered. Many of these horses, coming in at night heated and tired, it is unsafe to allow them as much water as they can drink. On coming in they are usually allowed a few mouthfuls of water and then rubbed down; then they are taken to the watering-trough and allowed a little more, and then put in their stalls, where their feed is lying waiting them. Fed again in the morn-

ing between four and five, and watered after feeding on their way to the wagon; are fed again any time betweeen twelve and two, being allowed one hour for dinner; fed first and again watered after feeding, and immediately returned to work. This is a complete reversion of what is known to be the proper way of feeding. City horses suffer more severely from indigestion during the hot months of summer. This is due to the fact that many of these animals come in in the evening completely exhausted and overheated, the alimentary tract and nervous system sharing largely in the general debilitated condition of the entire economy of the animal. Animals again insufficiently watered, their stomachs more in need of a rest than of work, have the same amount of feed to contend with as if in a normal condition—feed that the animal would probably not have looked at but for the stimulus given to the stomach by the few mouthfuls of water which the animal has been allowed to swallow. The stomach, already in a debilitated condition, the glandular structures not performing their proper secretory function, and the lack of termination to the capillaries and blood vessels of the walls of the stomach consequent upon the impaired vitality and depressed condition of the nervous system in general, the processes of gastric digestion are carried on very slowly and imperfectly, and should the animal slip his halter and get at the watering-trough the consequences are apt to be disastrous. The suffering of the animal during the hot season of the year is greatly augmented by the intense heat and the vitiated condition of the stable atmosphere dependant upon animal exhalations. Hardly has the stomach had time to get rid of its encumbrance than the morning feed is deposited in front of him, and, having eaten this, he then takes as much water as he can drink on the way to the wagon, thereby diluting whatever amount of gastric juice may have been secreted by the already overtaxed stomach, and to climax this a hard day's work ensues. This continues till sooner or later the walls of the stomach become weakened, and rupture of the stomach ensues as a sequel to an attack of acute indigestion.

Simple Indigestion.—Symptoms : Animal falls off in condition, tongue coated, breath slightly sour, hidebound, slight but frequent attacks of colic, bowels irregular, depressed appetite, licks the walls ; pulse somewhat weak ; liver probably involved ; this is indicated by yellowness of the visible mucous membranes. If due to over acidity of the stomach, lime water, sodium, and other alkalies. If the liver is implicated give aloes and calomel, follow up with such tonics as quinine, gentian, quassia, and iron ; if the animal is weak and debilitated give ale, beer, wine, and whisky. Groom the horse well, and give regular exercise. In all cases of flatulent colic or any form of indigestion it is well to make a particular examination of the teeth.

Acute Indigestion.—This is a very common as well as a very fatal disease. Often considerable distention is observed, which may be due to the presence of large quantities of food, or it may be caused by gas in the stomach and intestines, the gases formed being sulphuretted hydrogen, carburetted hydrogen, and carbonic acid gas. Rupture of the stomach occasionally occurs. In other cases the stomach and bowels become so distended that the movements of the diaphragm are interfered with, and the animal dies of asphyxia. The causes have already been mentioned in the beginning of this essay.

Symptoms of Acute Indigestion.—The animal becomes somewhat dull and sluggish in his movements ; soon he shows a slight uneasiness, turns his head to one side and seems to be in slight pain. Swelling of the abdomen becomes apparent, the animal's pain increases, he begins to toss about, rolls from side to side, and endeavors to balance on his back. When lying down he occasionally raises his head and looks toward his flank. As a rule the abdomen is greatly distended and there are eructations of gas. Regurgitations of food may also be noticed. In some cases sweats bedew the body ; there may be slight diarrhœa ; he rolls and tumbles about in a violent manner. The pulse at first is full, but gradually becomes weak and quick. In the early stages the mouth is hot, then becomes cold and clammy, the

limbs lose their natural heat and become cold; sweats break out; the animal walks about in a semi-unconscious condition, occasionally staggering or reeling slightly, may fall back on his haunches, and finally falls to the ground, makes a few convulsive struggles and dies.

Treatment.—Should be prompt and energetic. Give the following:

℞ Olei lini, Oj.
Spiritus chloroformi,
Spiritus terebinthinæ, āā ℥ i.
Acidi carbolici, ℥ ss.
Mix. Sig. Give at once and repeat in half an hour if animal is no better.

The following can also be given:

℞ Olei lini,
Ætheris sulphurici,
Spiritus terebinthinæ, āā ℥ iss.
Tincturæ nucis vomicæ, ℥ ss or ℥ j.
Mix. Sig. Give at once.

Empty the rectum with the hand and give an enema of

Spiritus terebinthinæ,
Tincturae asafoetida, āā ℥ i.
Glycerini, ℥ iv.
Soap suds, Oii.

Give hypodermically:

℞ Eserinae salycilat., grs. iss.
Pilocarpine muriat., grs. iii.
Aquæ, q.s.

When relief is obtained and improvement in the condition of the animal is manifest, medicinal agents should not be pushed too far: the animal should be comfortably clothed so as to preserve the surface temperature and prevent cold sweats. If sweats break out the patient should be carefully guarded from draughts of cold air. In cases of great distention the animal must be kept from throwing himself violently about, as rupture of the stomach or bowels might occur in consequence of a very violent movement on the part of the animal, and a purgative should never be omitted, as it is probable that purgatives relieve spasm and pain before developing any of their physiological actions.

Chronic Indigestion will ensue upon neglected simple indigestion or by feeding for a long time on large quantities of oats, irregular feeding, etc. The stomach is overtaxed and finally fails, which is commonly associated with functional derangement of the liver.

Symptoms.—Dull, languid, sweats easily, coat dry and dusty, slight attacks of colic, diarrhœa, followed by constipation, fæces either dark or very light in color, well marked yellowness of the visible mucous membranes, appetite capricious and depraved. This form of indigestion is often due to an insufficient supply of sodium chloride.

Treatment.—Give a physic; animal should always be well prepared with bran mashes before administering the physic; physic should be composed of aloin and ginger if the liver is affected, to be followed by carminatives and tonics at the proper time. Rock salt should be present in the animal's manger. If gastritis is present drastic purgatives are inadmissible; oil is preferable. The free use of whisky is indicated when the brain is affected, and other diffusible stimulants. The body should be well clothed and the extremities bandaged. Animal should be put in a box stall and allowed plenty of fresh air, easily digested food and good grooming.

Indigestion with Impaction is most likely to occur in old horses and in horses that are fed and watered after the manner described in the beginning of this essay. Sudden changes of food, feeding animal largely when much fatigued, over-ripe grasses and buckwheat.

Symptoms. — Tucked-up appearance of abdomen; well-marked symptoms of derangement produce delirium and sometimes coma and paralysis; animal staggers round the stall; after a time a typanitic condition, which may be regarded as a very bad symptom; animal dull and drowsy and without appetite. Although a well-marked case of impaction of the stomach may occur without the generation of gas, the animal paws and rolls, but not so violently as in spasmodic colic; turns his head towards one side, pointing towards the sternal region,

pulse becomes somewhat quicker, and unless relieved death soon occurs.

Treatment.—A powerful diffusible stimulant should be given first, and followed by a purgative in combination with nux vomica, the latter being especially beneficial in cases where symptoms of nervous depression are manifested.

TETANUS.

By W. H. Lawes, Jr., D.V.S., Red Bank, N. J.

A Paper read before the Veterinary Medical Association of New Jersey, Oct. 8, 1896.

The subject of this paper is a common but too often fatal disease among our equine species.

Tetanus is not a blood disease, as was once supposed; neither is it a functional disorder of the nervous system. It is caused by an anærobic bristle-shaped microbe (the bacillus of Nicholaier), which is found in many soils, barn-yard manure, and partly-masticated food. It is more prevalent in hot climates than cold, but is seen in most all climates. It is inoculable from animal to animal, when brought into contact, especially if a part be injured. This microbe once entered into the system, produces a toxine which acts like strychnine on the spinal cord, followed by the tonic muscular spasms.

The period of incubation is sometimes as short as twenty-four hours, but generally from eight to fourteen days.

Horses and sheep are most susceptible, cattle and swine less so, and dogs are resistant. Predisposing causes are wounds of any kind, but especially those of the feet, and often following the operations of castration and docking the tail.

On July 22d I was called to see a bay horse used for carting purposes, supposed to be suffering from some affection of the eyes, which the owner had been treating for two days with warm water, but did not improve with the treatment. I had the horse led out, made my examination, and found that he was suffering from tetanus, which was a great surprise to the owner. Upon inquiry into the history of the case, about three weeks

previous he had a nail in his off hind foot, which was pulled out and the horse went on to work without any difficulty. But, however, this was the cause (traumatism). Having the horse walked, stiffness was well marked, both in front and behind; the tail was slightly elevated and stiff; also the ears were very stiff. The membrana nictitans were withdrawn from their sockets, more so on the left than the right eye. Swallowing impaired, as he ate and drank very slowly; respiration slightly accelerated, pulse and temperature normal.

He remained in about this condition from the day I saw him until the eleventh day, when the spasms became very violent, lasting until the thirteenth day, when they began to subside. From this on he steadily improved, making a good recovery in six weeks, and is now at his usual work. The jaws were not locked at any time during the attack, nor did I have any trouble with the bowels being constipated. I had the horse removed to a roomy box stall, where it was quiet and away from the rest of the horses. I then left orders to let no one go near him except the owner. I restricted his diet to easily digestible soft food, beans and boiled oats in a mash, and left a pail of water in the stall continually. With difficulty I gave him seven drachms of Barbadoes aloes in one pint of warm water (from which there was no action). I then decided to give him fluid extract of cannabis indica in drachm doses, three times a day, given with a syringe, and thirty-grain doses of potassium bromide in solution, given the same way.

Through the kindness of Dr. Gall, I am able to describe briefly the treatment of hypodermic injections of antitoxine serum, which he has used with success. The antitoxine is in the form of a powder, and is put up in 25 c.c. bottles, each containing three grammes of dry concentrated serum. To prepare the serum for an injection the bottle must be filled with sterilized water, recently boiled, and allowed to cool, then shake thoroughly until the contents are completely dissolved. It will be found convenient to hasten dissolution by stirring the mixture with a probe previously passed through the flame of an

alcohol lamp to sterilize it. It is then cooled. The site of injection preferred is the side of the neck. This must be carefully clipped and disinfected with a 4 per cent. solution of carbolic acid, care being taken, as in all injections, to have the syringe and needle perfectly sterilized. The amount of antitoxine to be injected is three grammes of dry serum, each bottle containing this amount. After the injection the animal should be watched for twenty-four hours, and if the patient is steadily improving it may not be necessary to inject any more serum, otherwise the treatment should be resumed. It is very important to begin the injections as early in the disease as possible, the success of the treatment depending almost entirely upon that condition. If there is any apparent wound this should be treated with the following solution: Iodine, 1 part; potassium iodide, 2 parts; distilled water, 100 parts. This should be used repeatedly.

In this month's number of the AMERICAN VETERINARY REVIEW, Dr. M. J. Jones, of Cuba, Ohio, speaks very highly of the use of hyposulphite of soda in tetanus, claiming that he has cured 23 cases out of 34.

REPORTS OF CASES.

LATERAL CURVATURE OF THE SPINE AND VENTRAL HERNIA IN A FŒTAL CALF.

By W. J. MARTIN, V.S., Kankakee, Ill.

On the morning of Aug. 24, 1896, I received a message from an adjoining town to come and take a calf from a cow. On arriving at the place, I found the patient, a large animal of the Holstein breed, lying at full length upon her left side, in a semi-comatose state of exhaustion from previous labor pains, which were now recurring at long intervals of time and very weak at that. The nose of the fœtus, together with three limbs, protruded from the vulva.

On inquiring into the history of the case, I was informed that the cow had been in labor since the previous morning, and that several of the neighboring farmers had vainly tried to remove the calf. The vulva being much swollen, it was bathed

with tepid carbolized water and a copious amount of the same fluid was injected into the vagina and uterus. On passing my hand into the vagina, I found that two of the protruding limbs were the front ones, while the other proved to be the right hind limb. The head occupied so much space in the vaginal canal, that manipulation was performed with the utmost difficulty; it required the most strenuous effort on my part to reach as far as the calf's eyes, and owing to the somewhat abrupt formation of the frontal bones, hydrocephalus was at first suspected. The cow being much exhausted by her expulsive efforts while I was making this examination, suddenly ceased straining, which permitted the hand to be carried upward as far as the calf's occiput; the head was then found to be normal.

It was now decided that the case was one in which the hind limb not presenting, had become jammed against the brim of the mother's pelvis and the fœtal body had thus become, as it were, immovably wedged in the vaginal canal. It was now decided to use gentle traction on the calf's head for the purpose of drawing its body out as far as possible, in order to resect it at or as near as possible to the shoulder, and thus be able to perform version by returning the anterior position of the body and deliver the calf by its posterior extremities. A rope being placed over the calf's head, two men were told to pull gently on it, while I endeavored to return the protruding hind limb back into the uterine cavity. While thus engaged, I felt the body of the calf move forward by the force exerted by the men pulling. Seeing that an easy delivery could be made in this way, I at once told the men to pull hard, and the calf, together with the fœtal membranes, easily came away. The fœtus was indeed a curious looking object.

The head and front part of the body was normal, but beginning at the first lumbar vertebra, the spinal column made a sharp curve to the left side of the body, so much so, that the posterior part of the body lay in close juxtaposition to the side of the anterior part. The hind limbs presented their posterior surfaces forwards. The right hind limb, the one which presented, lay close up between the left front leg and the sternum. The left hind limb lay along the abdomen and slightly inclined to the right side of the body. The right hind limb was abnormally large, being at least twice as large as a normal limb; the left one being much atrophied was about half the size of a normal limb, which accounted for its absence in the presentation. In the right side of the calf, behind the last rib and nearly on

a line with the stifle joint, was an opening about four inches in height and about six inches in length, through which the entire visceral contents of the abdomen had escaped, and lay outside of the calf's body among the fœtal membranes. The opening through which the intestines had come, had at some previous time been much larger, as quite an area of cicatrization was visible on the surrounding skin. The intestines were small and ill developed, their structural tissues being extremely delicate in texture and of a pale red color. They contained a small amount of meconium. The skin and hair over the entire body was fully developed, as was the posterior part of the body, with the exception of the legs. The calf was a female and all the organs of generation were fully developed and occupied their normal position within the body.

The owner stated that about ten days previous to her time of calving, the cow had jumped astride of a fence and alighted upon her abdomen; he thought that the malformation of the calf was due to this accident. The undeveloped condition of the intestines and the left hind limb, would preclude any such theory. Again, if the calf's spine had been thus violently injured *in utero*, death would undoubtedly have occurred. On the contrary, the calf was without doubt alive at the time parturition began. The bones of the spinal column were also firmly united by anchylosis, which goes to show that the case was one of arrested development, due, without doubt, to the position assumed by the fœtus in the womb. The cow recovered completely.

POISONING BY LOCO WEED.

By Coleman Nockolds, M.D., V.S., Cadillac, Mich.

During the year 1892 I took the opportunity and went with a friend who was going to take his herd of about three hundred half-breed mares, geldings, colts and young mules from southern Texas to the plains in northwestern Texas for the summer grazing. We started during April. The animals with the exception of the colts were all rather thin, having had but scanty grazing during the winter, and once they were up to where the grazing was good lost no time in making up for their short rations during the past winter. In that particular section of country we noticed quite a quantity of that little weed growing amongst the grass, which the cowboys and Mexicans call loco (Loco: Mexican meaning crazy), a little plant growing from six to eighteen inches in height, with pale green hairy leaves

and bearing a white or yellow blossom. As the animals did not eat the loco and there was plenty of grass and water in that vicinity we did not think there was any necessity of moving them. It was about two months after that we noticed some of the mares were not doing as well as the others and upon close observation we noticed that they were eating the loco weed. About this time we had quite a long spell of dry weather and the grass dwindled, but the loco seemed to thrive if anything better than ever. One mare in the herd seemed to be affected more than the others. She would stray away from the bunch at every opportunity and eat every bit of loco she could find, and would hardly touch grass at all. When one tried to drive her into the herd she would try and run off in an opposite direction and even run headlong into the horse the herder was riding. There was a glassy, vacant look about the eyes; animal very emaciated; head outstretched, as if animal was suffering from a sore throat; coat staring, and when trotting would lift all four feet unnaturally high, and if crowded would fall headlong. Animal seemed to imagine little sticks lying on the ground were high fences, over which she would jump, and that little hollows were wide ditches. I noticed all the animals affected were constipated, fæces covered with mucous. Some showed signs of being affected only when excited or warmed up with exercise. I have seen old saddle ponies that are locoed affected in various ways—one in particular that the cowboys had to throw and tie down to saddle, but as soon as a person was on his back he would behave as if nothing was wrong. The cowboys claim that most horses affected show violent symptoms only when excited or warmed up. In some instances where the sight is affected I have seen horses run head first into a brick wall or rail fence. We started home with the herd in October, leaving six behind us dead from the effects of the loco weed, and we had a great deal of trouble in keeping about eighteen affected animals up with the rest of the herd. Every horse that had eaten the weed to any extent died before that winter was over. In the bunch that I have mentioned all the animals that were locoed were mares over six years of age. The colts, geldings, and mules showed no symptoms of the weed at all. There were twenty-three deaths from eating loco out of a herd of three hundred in something under a year.

I feel confident that loco is a narcotic poison, but what the actual properties of the weed are I do not know. People living in a "loco" country say change of pasture is a cure, but I may

state that in my experience I have found that once an animal is affected by loco to a certain point changing food does no good. I have tried no other treatment.

MISSED LABOR—MALPRESENTATION—CÆSARIAN SECTION—RECOVERY.

By T. B. ROGERS, D.V.S., Woodsburg, N. J.

On June 20th, 1896, I was called to attend a young Holstein cow in labor, with the history that this cow was last served by the bull thirteen months ago. At the end of the normal period of gestation she made bag, fell in behind and presented the usual preliminary phenomena of labor. These symptoms passed off and the uterus remained quiescent until the night of June 19th, when active labor commenced. The calf was in the dorso-ventral position, the back of the calf downward, head and neck turned back and two front legs presenting. After numerous fruitless efforts to rectify the position, I removed the anterior extremities and endeavored to bring up the head, but was at no time able to touch it. I then eviscerated the calf, fixed a blunt hook in the lumbar region, and tried to pull the fœtus far enough back to let me get the head, but these, like the prior efforts, were entirely futile. The cow became somewhat exhausted, and I finally obtained the owner's consent to perform laparotomy. The cow was cast on the near side, and through an incision a foot long the uterus was exposed and brought up. An incision in the right horn enabled me to get the hind extremities, and the calf was removed by several strong assistants, who were instructed to pull *directly upward*. No uterine *débris* escaped into the peritoneal cavity. The uterus was first sutured by interrupted sutures, the long cut end being left free in the cavity, and the peritoneal coat was then sutured over these by an uninterrupted over-and-over suture of silk. The peritoneum was approximated by interrupted silk sutures and the musculature and skin by interrupted sutures of heavy linen thread (the only available material). A heavy coat of tar was then placed on the wound track. The patient manifested no symptoms of shock or collapse, and her convalescence has been uninterrupted. The wound healed well, and at no time was there anorexia or even suppression of the lacteal secretion. The medical treatment consisted of spiritus ætheris nitrosi with acetanilid; and, except its daily coating of tar, the wound received and required no attention. The calf weighed over 100 lbs. and when stretched out measured over six feet in length.

A MONSTROSITY.

By A. W. YOUNG, V.S., Chesterville, Ohio.

Mr. M—— noticed his cow in labor, about 5 o'clock on the morning of June 30; he and his hired hand went to her assistance, but could do nothing. She was given little attention during the day and at midnight I was called. Examination revealed two hind limbs protruding from the vulva and two other hind limbs in the vagina. I supposed that it was a plain case of twins, but what seemed strange was that in both, there was a breech presentation. Further examination, showed a freak of nature such as I had never met before. The fœtus was dead and the owner wanted the cow saved. I performed partial embryotomy, removing hind limbs and viscera, after which traction was applied and balance of fœtus removed. Found the fœtus to be double in every respect and perfectly developed. None of the organs were larger nor smaller than usual, in twins. The heads and necks were separate but the bodies were enveloped in one skin. The entire osseous system was double as was also the viscera and all internal organs. They were male and female. Have any of the readers of the REVIEW found anything like the above?

TETANUS—ANTI-TOXINE—DEATH.

By OSCAR FAUSNER, D.V.S., New York City.

Aug. 18th was called to see large chestnut mare, six years of age, history very brief, groom stated the mare refuses to eat, and drinks about half pailful per day, and takes very long to drink that amount, also coughs. Examined carefully; head slightly extended, temperature 103° F., pulse full and strong, very sensitive over the larynx and pharynx, slight discharge from the nostrils, no other symptoms visible. Proper treatment was prescribed, and would call in the morning.

19th, I found a great change, temperature 101° F., pulse full and strong, head extended, stiff gait, very anxious expression. I questioned groom if mare was hurt in any way or picked up a nail, etc. After considerable talking, finally said mare did pick up a nail, but that the blacksmith attended to that. Had shoe removed at once and sole pared, puncture was at the point of frog. It was filled with tar and oakum. When removed quite some pus escaped; was treated antiseptically and small piece of bandage put over puncture and hot poultice applied. Owner asked what were the chances of recovery. I said doubtful. This mare was a favorite, so I suggested to try the antitoxine treatment. Injection was given at 4 P.M.

20th, animal very nervous, head extended, all the muscles of the cervical region swollen, jaws set, refusing to take any liquid food; temperature 101° F.; pulse strong and full; abdominal respiration; not able to move; if excited would stagger and raise head.

21st, no change for the better, animal in bad state, head greatly extended; temperature 105° F.; pulse weak; abdominal respiration; very anxious expression; could not move; muscles of cervical region swollen and rigid; discharge from the nostrils; eyes staring and glassy appearance. I advised owner to destroy, and pitied the animal, as I thought it my duty to relieve her from so great suffering.

Treatment was as follows: Removed to box stall, darkened so no sunlight was visible, wound cleansed thoroughly and creoline solution injected well; the hot poultice applied as often as necessary; strychnine was given, half grain to ounce, three times per day. Oatmeal water and anything animal would eat, viz., bruised oats, etc. I certainly would have continued the antitoxine treatment, but animal was suffering greatly and thought best to destroy.

QUICK RECOVERY FROM RUPTURE OF FLEXOR METATARSI.

By Francis Abele, V.S., Quincy, Mass.

Was called at 6 A. M. to see a horse with broken leg. "Come prepared to kill it." She was bright, did not seem to have severe pain; had been cast and had kicked end of box stall out. When I attempted to move her, she used the leg, but knuckled over so far that she walked on wall of toe; it seemed, in fact, almost on front fetlock. From hock, leg would dangle; hamstring (gastrocnemius) was loose or wrinkled. Diagnosed ruptured flexor metatarsi. Next day swelling on inside of hock showed plainly, loose and flabby. In three weeks led it out to see what progress was made. Lameness hardly perceptible. She reared, kicked and cavorted, but leg was strong enough to stand it all.

VIVISECTION OUTDONE—A PECULIAR CASE.

By Francis Abele, V.S., Quincy, Mass.

I was called to an aged pet cat that was troubled with purging and vomiting, due to lapping insect powder from its fur. Gave syrup of buckthorn, which brought speedy relief, only to be followed by another attack from the same cause. Ordered

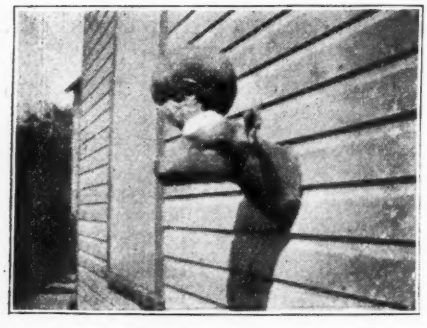
her washed, and gave enema of two quarts of warm water and soap with glycerine added, with a fountain syringe.

Now, to my surprise, the cat strained and vomited—soap-water, clean and clear, save two tapeworms about eight inches long each.

The wonder to me was not the fact of the tapeworms, nor the clear water, but that I had forced a passage completely through the cat. I have often laughed when people would say: "Why, doctor, if you pump in any more it will have to come out from the mouth."

Why could I not have used plaster of paris solution, and now have a preserved specimen of stomach and intestines in their proper positions?

CONGENITAL HYDROCEPHALUS.



The accompanying illustration is that of a calf with congenital hydrocephalus, occurring in the practice of Dr. William P. Stranghan, of Stamford, N. Y., which the doctor mounted, photographed and very thoughtfully sent to the REVIEW. From its apparent size, he was very fortunate in extracting it in its entirety.

SUPERVISION OF MILK SUPPLY.

REPORT OF THE VETERINARY INSPECTOR OF THE CITY OF WATERTOWN, N. Y.

Dr. Jno. A. Bell, County Secretary for Jefferson County of the New York State Veterinary Medical Society, made the following very full and careful report to his Society at its late annual meeting in Buffalo, and we reproduce it this month *in extenso* on account of its many excellencies and as an example to other cities:

Mr. President and Gentlemen:

As committeeman for Jefferson County, New York, I am pleased to inform you that I live in a section of the country so far north that we are nearly free from contagious diseases.

During the year 1895 we had three small outbreaks of anthrax in cattle, from which 15 cows died, but so far this year, 1896, we have been entirely free from the disease.

Regarding tuberculosis and the work done in that line in my section of the country I concluded to give you a synopsis of the workings of our board of health and the regulations governing the sale of milk, hoping it will be of interest to some of you.

MILK SUPERVISION BY THE BOARD OF HEALTH OF WATERTOWN, NEW YORK.

Inception of the System.—Watertown is a city of 22,000 people, situated in Black River valley, ten miles from Lake Ontario, and 25 miles from St. Lawrence River, in one of the best and most healthful dairying sections of the State. The climate in summer is mild, in winter severe, the thermometer falling sometimes to 15 degrees below and occasionally to 25 degrees below zero.

In 1893, to preserve the cleanliness and purity of the milk, eliminate diseased cows, and known impure and foul odors, the city board of health appointed me a veterinary inspector to supervise and inspect the supplying dairies and the vending of the milk to customers.

The effect was largely experimental. There were then no regulations governing the supervision, and in consequence it had but little effect among the dairymen.

The result was mainly instructive to the board in formulating the methods and supplying the remedies provided by the present system. In February, 1895, after a three months careful study of the different features of the matter, with the aid of leading dairymen and milk experts of the county, the board adopted the present regulations, which went into effect May 1, 1895; and appointed me its veterinary inspector.

The System.—The regulations treat the subject of supervision under three heads: Duties of vendors, duties of producers, and duties of the veterinary inspector.

Duties of Vendors.—The vendor must obtain a license to sell, and the dairy must be examined and comply with the regulations before the license is issued. The license bears a serial number, which, with the word "licensed" and the year, appear on each side of his wagon on plates furnished by the board; for example, "12, Licensed, 1896." The license expires and must be renewed on the first day of each year. Renewals are governed by the same rules as new licenses. He must notify the

health officer of the city of all cases of fever and contagious disease in his family and in those families where his milk is produced or cans washed, at once as they occur; and report on the first of each month to the inspector on blanks furnished by the board, all such cases of sickness, whether he gave such notice to the health officer, what "regular" and what "emergency" dairies he sold from, and the number of cows added to the regular dairies during the month. The regulations are posted in all the dairy barns. The sale of milk at stores and stands must be under a permit naming the vendor furnishing it. Cans must be washed without soap, salt being recommended; the last application of water being to scald with boiling water.

Duties of Producers.—Stables must be well ventilated with air shafts from near the floor to the roof as foul air outlets, well lighted and aired, kept whitewashed, clean and dry, with trenches behind the cattle at least eight inches deep to receive the excrement, milkers to use no moisture on hands or teats while milking, dirt carefully removed from the body of the cow before milking.

All milk must be thoroughly and slowly aerated in pure air by its exposure thereto in small particles at a time, without ice or cold water, as soon as it comes from the cow and before cooling.

In no case shall milk stand or be aerated in the stable, or in any building or place affected by stable or other foul or impure odors or air.

The erection of small separate buildings for aerating in places surrounded with pure air is recommended. Cows must be fed on wholesome food and pure water, and be kept well cleaned. Milk must not be sold from any diseased cow.

Duties of Veterinary Inspector.—He is charged with the enforcement of the regulations. He must make two general inspections a year of all dairies and their surroundings, examining cattle as to health; cans, cattle and stables as to care; and special inspections where and as need be. He examines dairies for and issues the licenses, and keeps the records belonging to the system, supervises the examination of the milk, reports monthly to the board upon all matters during the month and makes an annual report at the end of the year.

Any violation of the regulations is a misdemeanor punishable as such. The board may also punish violations by revoking the license. The entire expense of the system is borne by the city, there being no law by which the milkmen can be made to share it.

Results of the System.—The adoption and operation of the system first met the determined opposition of some of the milkmen, a few were in favor and many were indifferent or sympathized with the opposition. Petitions were made and hearings had for its abandonment, as unnecessary, without precedent anywhere else, an innovation and wrongful interference with private rights; that from experience and interest they were better fitted than the board to look after such matters. Opposition has now ceased and all have given it their willing and hearty support.

We believe we are among the pioneers in supervising the sources of the public milk supply and that, from our own experience, such supervision is of the highest importance from a sanitary point of view.

After the system had been in operation a little more than one year, stables that were dark, ill ventilated, covered with cobwebs and dirt, had poor or flat floors, without sufficient drop or trench to receive the excrement, had been given light, ventilation, cleanliness, new floors with sufficient drop to keep the cattle clean, have been whitewashed, bedded and received better care generally; cattle better cared for and cleaned; the milk which was often allowed to stand in the stable over night and not aerated at all, is now all properly aerated and kept entirely separate from the stables and stable odors.

The publication of reports of the condition of stables, and care of dairies and milk, makes it necessary for the careless dealers to emulate the careful ones in order to hold their customers. About fifty dairies, numbering about 1,000 cows, supply the city with milk and cream.

The following improvements are taken from my annual report made January 1, 1896, after the system had been in operation eight months:

Stables whitewashed, 22; stables given better light, 18; stables given better ventilation, 17; stables given new floors, 11; stables given new ceilings, 7; stables given new linings, 2; new stables, 2; new aerating buildings, 8; all milk properly aerated in separate buildings.

Tuberculosis.—In 1895 the board made a bacteriological examination of the entire milk supply and discovered the presence of tuberculosis in the milk of 15 dairies, numbering 281 cows. The State Board of Health, upon request of the local board, administered the tuberculin test to these 281 cows, and found eight cows afflicted with tuberculosis, which the State killed and

paid for. In each case the animal killed showed evidence of the disease upon post-mortem.

In two dairies the tuberculin test disclosed no tubercular reaction where the bacteriological examination showed the presence of tuberculosis in the milk. The tuberculin test showed that nearly three per cent. of the cows examined were tuberculous, and in addition marked six cows as suspicious cases.

The board is fully awake to the danger of tuberculosis and firmly believes in the efficacy of tuberculin to detect it. Its purpose is to examine for tuberculosis once a year, and also, in the interim, the newly added cows, which the vendors' monthly reports show will be about one-third of the dairies each year. Upon the failure of the State appropriation made to eradicate tuberculosis, the entire expense falls upon local boards, as is the case this year, and no law provides for killing or paying for the tuberculous cow except when the State is making the test. We find this our greatest stumbling block. What shall be done with the diseased cow? Her existence is a peril anywhere, and her use cannot be officially watched and prevented.

The board believes that when bacteriological examination shows tuberculosis in the milk of a dairy it has discovered a nuisance, a menace to health, and the dairymen should then be at the expense of locating it and eradicating it, of abating the nuisance, as in the case of any nuisance, the work to be done by an expert under the approval of the local board; that when the tuberculin test locates the disease in the cow the local board should have power to kill the cow, the loss of the animal to be borne by the owner if post-mortem shows disease, and by the local board if not diseased; and that a law should be passed conferring such powers and imposing such duties, and we urge upon this society that it take such steps as lie within its power toward securing proper legislation on this subject.

Meat Inspection.—No method of meat inspection has yet been adopted, the expense having thus far stood in the way. The board favors a public slaughter-house, where all animals shall be killed under official supervision and where the rendering shall be done, and all meat brought into the city for sale, except that receiving government inspection, shall be examined. Slaughter-houses are now under the supervision of the board, but the results are unsatisfactory.

In Halifax, Nova Scotia, the veterinarian receives fifty cents per call.

PECULIAR VIEWS FROM A HIGH OFFICIAL.

OAKLAND, CAL., Sept. 26, 1896.

Editors American Veterinary Review:

GENTLEMEN:—Enclosed you will find a clipping from the San Francisco *Chronicle*, the result of a conference by Major H. E. Alvord, Chief of Dairy Division of the U. S. Bureau of Animal Industry, with the health authorities of San Francisco.

We have heard and read many long-eared demonstrations, but the statements contained in this article are beyond doubt, considering the source, the most sottish and idiotic we have ever heard.

For the past five years a few earnest and hard-working veterinarians have been unceasingly laboring to bring the subject matter of the eradication and suppression of contagious and infectious animal diseases in this State down to a practical and scientific basis. The work done in these few years has just commenced to bear good fruit, more especially with regard to the weeding out of our dairies the tuberculous cow. Most of the larger cities on this coast have been prevailed upon by the veterinary and medical professions to adopt ordinances compelling dairymen to obtain a license before being permitted to dispose of their milk within the city limits, and before a license is issued to them they have to furnish or present a certificate of health from the city veterinarian. Some of our cities have had these ordinances in force for the past six months, and while in a manner they work a temporary hardship on the dairymen, the results meet with the unanimous approval of the veterinary and medical professions and the public at large.

In our municipality (Oakland) such an ordinance as described above passed our City Council by a unanimous vote and is now in the hands of our Mayor, who, if reports are true, has vetoed it, just because he has been counseled so to do by just such antiquated old fossils as this Major Henry E. Alvord. Is it not discouraging to see the results of five years' labor thrown to the winds by a few idiotic statements from the lips of a man whose official position should prevent him from making an ass of himself, even if he does not know any better.

We have an idea, Mr. Editor, though an impracticable one, we are sorry to say, that some legislation is needed to provide guardians or keepers for some of these mossbacks that are holding, in Washington, some of the most important offices in the gift of the American people, and these keepers or guardians

should be empowered to muzzle their charges when they deemed it expedient to do so in order to prevent them from disgracing the office they have the honor to occupy, and to prevent them from undoing work that has taken years to accomplish.

We are not surprised at Major Henry E. Alvord giving utterance to the statements in the enclosed article, for we presume the poor man knows no better, but we are surprised that such ideas could originate in the brain of a man holding the position of Chief of the Dairy Division of the U. S. Bureau of Animal Industry.

This worthy gentleman, in support of his theory or ideas, quotes some European authority. We ask you, Mr. Editor, what would be the condition of the stock industry in the United States at the present day if we had followed the teachings of European authorities at the time pleuro-pneumonia contagiosa broke out in our Eastern States? If we adopt similar methods for the suppression and eradication of tuberculosis as we did for the eradication of pleuro-pneumonia, we shall eventually gain control of this devastating plague, but if we follow the teachings of European authorities in regard to tuberculosis we will meet no better success than they have done with pleuro-pneumonia contagiosa.

He speaks of isolating diseased cows and keeping them for the sole purpose of giving birth annually to a calf. This may be all very well on a breeding ranch, but when applied to a dairy we fail to see where the profit comes in by keeping an old shellback cow for the sole purpose of giving birth annually to a calf that at its best is only worth a few dollars.

Acting on this theory, supposing all tuberculous cows on a dairy are quarantined, how can the health authorities convince the public that unscrupulous persons will not utilize the products of the isolated animals?

To the intelligent mind the whole matter is preposterous, but coming at this particular time when the ignorant and unscrupulous are zealously seeking for obstacles to cast in the road of sanitary reform it becomes at once a serious proposition.

Respectfully,

DRS. PIERCE AND ARCHIBALD.

Major Henry E. Alvord, Chief of the Dairy Division of the Bureau of Animal Industry of the Department of Agriculture, held an informal conference with the health authorities yesterday on the subject of tuberculous cattle. There were present Bacteriologist Spencer, Professor Wenzell, chemist of the Board of Health; Dr. Morse, Health Officer Lovelace, Professor E. J. Wickson of the University of California, F. C. de Long, of the California State Board of Agriculture, and Attorney J. B. Reinstein.

Major Alvord announced himself to be acting in an individual capacity and not as the representative of his department in the expression of views concerning the war recently waged upon tuberculous cattle by the Board of Health. He said that he did not consider that the presence of tuberculosis as revealed by the tuberculin test was a justification of the immediate slaughter of the animals. He believed that the proper plan would be the complete separation and isolation from the healthy animals of those showing traces of disease.

"A distinction must be made between diseased cows and sick cows," said he. "I recommend the immediate slaughter of the sick cows, but just as a person diseased by consumption may round out a useful career, so may a diseased cow. A strict quarantine should be established of the diseased members of a herd; their milk should not be sold, nor any of its products marketed, but for breeding purposes these animals are perfectly good. It is now an accepted fact among veterinarians that the disease is not transmitted to the progeny.

"It is not practical to build separate barns for these animals, but by placing partitions in the barns the diseased and healthy animals may be kept separate. When the disease becomes so bad that the animal is manifestly sick it should be killed."

In support of his theory Major Alvord submitted extracts from a treatise by Professor Bang of Copenhagen, in which the reaction of tuberculin was dealt with and the reliability of the test fully considered. From the treatise the following extracts were read:

"From the uncertainty in the action of the tuberculin, established in various ways, we must necessarily conclude that the tuberculin test is not to be regarded as a certain legal proof of the existence of tuberculosis. When coupled with a physical diagnosis it may be considered sufficient to prove tuberculosis, but the tuberculin reaction alone gives, in my opinion, no sufficient proof of the presence of tuberculosis.

"The tuberculin test can produce a worse condition in tuberculous animals than before existed.

"It appears to me a very great risk to subject herds of breeding cattle, milch cows and other animals to the tuberculin test. By this procedure the tuberculosis which in many animals is in a dormant state is aroused and made immediately dangerous.

"A stronger reaction is most often noticed in slightest cases, while cattle which have been affected a long time frequently react only slightly or not at all. The large majority of reacting animals are only slightly tuberculous. They can remain for many years fully capable of accomplishing their work, and with many of them the tuberculosis remains wholly localized for the entire life, or even a cure may take place. For milk-yielding countries I prefer for the present to recommend a less radical method. First, to inoculate the herd with tuberculin. Second, to separate the reacting animals, as far as possible, from the non-reacting. Third, to kill the evidently sick animals at once. Fourth, to rear the calves of the cows which react, but otherwise appear healthy, or at least only slightly attacked. Fifth, to remove the same immediately after birth from the infected stable, place them in the healthy division and protect them from further infection, especially from milk feeding. Sixth, to carefully disinfect the stable. Seventh, to inoculate with tuberculin the animals of the healthy division once or twice yearly."

Major Alvord said that he considered the sanitary inspection of dairies of far more importance than the destruction of tuberculous herds. "I have examined some city dairies in the East," said he, "where the cows stood in stables and were milked through all stages of disease up to the very day they died. Dark, damp places where disease was sure to overtake them. In the city of St. Louis, where a larger proportion of the city's milk supply comes from city stables than from the farm, I found a condition of affairs such as I would not dare to tell you of. The health authorities there are co-operating with me, and conditions are becoming much better. I do not consider the presence of tuberculosis germs of such size and quantity as to be plainly discernible to the naked eye in slaughtered animals a justification for their destruction."

TRICHINOSIS IN AMERICAN HOGS IN GERMANY.—A dispatch from Berlin of recent date says: "The first official report of trichinosis in American hog products in Germany will be published next February."

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

TUBERCULOSIS IN HORSES.—In the *Veterinary Journal* Mr. H. Ferguson records a case of this affection which is essentially interesting on account of the generalization of the disease, tuberculous deposits being found extensively spread at the post-mortem. The lungs were much increased in volume but not collapsed. Through their structure were areas of caseation, granulation and fibrous thickening. The bronchial glands were caseous. The diaphragm was studded over with tumors, of various sizes, all caseous in their centres. The liver was riddled throughout with masses of granulations and caseous nodules. The spleen was normal. The kidneys contained no tubercles. The lymphatic glands of the neck and maxillary space were enlarged and ulcerated.

PAROTID DUCT FISTULA.—In answer to an inquiry made by a collaborator of the *Veterinary Record* upon the treatment of this lesion, several cases are recorded in our contemporary where various suggestions are made, viz.: the joining of the wound across the orifice and the tying of a silk thread around it, the parts being kept clean and antiseptic with a lotion of bichlor. of mercury; the application of blister followed by cauterization with solution of nitrate of silver; collodion, pitch plaster, and obliteration of the gland by injections of tincture of iodine; the free division of the tissues involved, cutting of the walls of the fistula and then closely adapted suture of the wound with the strictest antiseptic precautions; a case is also recorded of beautiful healing in two or three days by tying the animal rather short in his stall, giving him nothing to eat but thin gruel, and putting a flax seed meal poultice over the wound.

EXTENSIVE ABDOMINAL WOUND IN A FILLY.—As an evidence of the impunity that, contrary to old ideas, the wounds of the abdomen present in our days of antisepsy, the *Veterinary Record* publishes a case of a three-year-old filly which had received a large wound through the abdomen, extending backwards and downwards and, commencing at the upper part of the lower third of the eighth rib,—leaving a large triangular flap of the skin hanging with a big piece of the external oblique of the abdomen, and complicated by the protrusion of a square foot of the mesentery, three ribs torn from their cartilages, and the colon protrud-

ing. The treatment consisted in the cutting off of the hanging mesentery and also of the piece of muscle, puncturing with an exploring needle of the bowels to permit their return into the abdomen, careful antiseptic washing of the wound, sutures of the abdominal wall and of the skin with glycerine and water, carbolic acid solution dressing repeated, and a binder right round the abdomen. The animal made a fine recovery, without having lost one meal and never having a rise of temperature above 103°; and yet her hygienic surroundings were not the most favorable to her recovery.

LARGE COLON ADHERING TO THE PELVIS AND TO THE RECTUM—RUPTURE OF THE INTESTINES.—Mr. E. Butler, M.R.C.V.S., records, in *The Veterinarian*, this rare case. A draught horse, six years old, was affected with intermittent and irregular attacks of colic. Rectal examination revealed a fluctuating large tumor on the left side of the pelvis and adherent to the rectum. At first this tumor was soft but soon became harder and harder. After six weeks it was very hard. The rectum was pushed toward the right of the pelvis and intimately attached to the tumor, which, pressing on the bladder, gave rise to much pain and incontinence of urine. Defecation was also very difficult. Ultimately the horse died in one of these colics. At the post-mortem, the abdominal cavity was found full of food, which had passed through a large tear of the large colon, at the pelvic curvature, which was found adherent to the pelvis and to the rectum; the rupture measured some six inches in length and appeared to have taken place gradually. The pelvic curvature contained hard fæces, moulded on the form of the intestines.

INVASION OF THE POSTERIOR AORTA BY A SARCOMA [*By Mr. J. A. W. Dollar, M.R.C.V.S.*].—After eight years of apparent perfect health a horse became lame on the left hind leg. The lameness subsided by a little rest, but soon returned, to disappear again. This condition kept on for a period of about six months; the animal being otherwise in good health, his appetite good, his general condition satisfactory, except an œdema of the testicular envelope. Soon the lameness affected both hind legs, and finally was unable to work. The swelling of the testicles spread under the abdomen, as far as the elbows, the spermatic cord was thick and tense, venous pulse appeared on the jugular; there was difficulty of micturation, no colicy pains; the abdomen became large, the loins hollowed; there was some jaundice of the membranes. At the post-mortem an enormous

tumor, occupying the lumbar region, was found—the kidneys were hypertrophied. The growth involved the posterior aorta, weighed over 19 pounds, and seemed to be the continuation of the external coat of the aorta. It also involved the posterior vena cava, the ureters, the fascia covering the psoas, and the nervous trunk of the region. It extended from the renal to the iliac arteries. The microscopic examination showed it to be of sarcomatous structure.—(*Veterinarian.*)

AUTOPLASTY IN THE HORSE.—Mr. D. C. Campbell, M.R. C.V.S., in the same journal, publishes the record of a case of skin grafting which seems to him somewhat encouraging. It is that of a horse whose shoulder had been torn by another and for which the treatment applied made but slow progress. To hasten the recovery an attempt was made to graft a number of small pieces of skin (about ten) taken from the neck. These were removed with all antiseptic care, the granulations of the wound gently irritated and the pieces of skin carefully laid here and there on the surfaces of the wound. The whole was covered with a piece of oiled silk and a protective bandage. On account of the restlessness of the patient this had to be removed the same day. Everything would have gone well, had it not been for that accident. The wound, however, healed well and left but little cicatrix.

GERMAN REVIEW.

By W. V. BIESER, D.V.S., New York City.

BASEDOW'S DISEASE IN THE DOG.—Ever since 1840 Basedow's disease has been described in animals only three times (horse, dog, cow). A. had an opportunity of recording a case in the dog. The case began with restlessness; the dog had occasional convulsions; never reached the size of its mother, brothers, or sisters; eyes protruded markedly for the last four weeks; the dog could not remain quiet long in any one place, turning about uneasily and whining. Upon examination the eyes were seen to protrude markedly; the upper lids were immovable (Grafe's symptom of Basedow's disease in human beings); the pulse was 130 and arythmic; the respirations 30–35. The heart beats were easily felt, the arteries being very strongly contracted. There was marked swelling of the thyroid gland. In human beings, the protruding eyeballs, the goitre, and acceleration of the pulse rate are the chief symptoms, arythm of the pulse being

only exceptionally seen. The disease in human beings is considered as a neurosis of the sympathetic nerve, especially as far as the goitre is concerned. The animal was destroyed with chloroform. Autopsy: Brain was markedly anæmic; attached to the markedly enlarged thyroid were three accessory glands; the right side of the heart was decidedly dilated.—(*Berl. Thierärzt Woch.*)

A NEW FIND IN LEUCÆMIC BLOOD.—In a typical case of lymphatic leucæmia M. found in the plasma of the lymphocytes small colorless bodies, of well defined contour, and varied shape, now oval, now round, now puckered, showing amœboid movements. Upon warming the slide these amœboid movements causing variations in shape were more rapid and more marked. He had thus far failed to discover these particular bodies in all other cases of lymphatic leucæmia, in freshly extirpated lymph glands of patients suffering from leucæmia, also in glands of oxen and cats suffering from leucocythæmia. This discovery means, therefore, that there is either a degeneration of the cells or protozoan present. A. also recommends chinin here as being effective, solut. Fowlerii, as is too often the case in leucæmia, being powerless to effect any result.—(*Berl. Thierärzt Woch.*)

CONCERNING THE PHAGOCYTIC POWER OF THE BLOOD OF THE NEW BORN.—In the study of immunization, from no source as yet has the blood of the newly born been brought into requisition. The author has of late years studied such blood with special reference to its immunity-giving powers. He studied the blood of 82 newly born and in 68 cases, viz., 83 per cent., found such blood more or less protective against diphtheritic infection; he found in 14 cases only, viz., 17 per cent., no immunity-giving corpuscles (phagocytes).—(*Berl. Thierärzt Woch.*)

SHOULDER LAMENESS IN A HORSE.—An army horse favored the off fore leg. Treated as shoulder lameness, he failed to improve. The author putting his hand between the chest and elbow-joint found in about the middle of the humerus a hard, painless, movable mass of the size of an egg. This was removed and the lameness disappeared. The author declares that the swelling by motion of the limb, exerted pressure on the radial nerve which in time led to disturbance in locomotion.—(*Schweiz. Archiv. für Thierhlk.*)

HAIRBALLS IN THE ŒSOPHAGUS OF COWS.—S. discovered after a careful examination of a markedly flatulent cow, a round body in the upper part of the œsophagus which he took for a

potato. After this body had been, with extreme difficulty, removed through the mouth, it transpired that it was a hairball of the size of an ordinary billiard ball. L. observed a similar condition of affairs in another cow. But he did not succeed in driving the tightly-wedged foreign body either down into the œsophagus or up through the mouth; thereupon he resorted to œsophagotomy and removed a heavy hairball weighing 50.0 (12½ drachms). The animal was slaughtered the next day. That the hairballs regurgitated into the œsophagus from the rumen after repeated chewings is evident.—(*Schweiz. Archiv. für Thierhlk.*)

SPANISH REVIEW.

PROFESSIONAL CHRONICLE.—The editorial staff of the *Gazeta de Medicina Veterinaria de Madrid* complains of the deficiency of education of the veterinary students who enter the schools of Spain. Notwithstanding the fact that more than one-third of the candidates are not admitted, those that enter are of a regrettable nullity. The authors of the article pity the professors of those schools, who, though taking so much trouble to teach their scholars the subjects necessary to the practice of their profession, will find that when they leave the schools they have benefited but little by their teachings, though the curriculum is so deficient and incomplete. They beg the "catedraticos" of those schools (professors) to have the courage of Bourgelat, who threw up his position before a too easy board of examiners, and refused to play any longer the part of "scientific charlatan," and thus to escape the accusation of being perfect "vividores," or "strugglers for life," who look only after their own interest, their own welfare, independent of that of others. They ask the Minister of Agriculture and the General Director to watch the examinations and reform at once veterinary education.

CONTRIBUTION TO THE STUDY OF THE DISEASES OF THE SPINAL CORD [*By Don Juan Natamoro Albial*].—The author relates a case of acute hyperæmia of the spinal cord, for which he recommended the following treatment: 1st day—Bleeding at the jugular, 4 pounds; stimulating friction over the loins (strong liniment); tracheal injection of 5 c.c. of solution of aconitine (5 centigrammes in 50 grammes of water); another injection in the night. 2d day—No change in the symptoms. A purge of 60 grammes of aloes, 15 of colocynth, and 0.30 centigrammes of

croton oil, divided in two doses, two hours apart. (What a purge!) 3d day—Improvement. Tracheal injections renewed. 4th day—Same. 5th day—The hind legs move; setons to the thighs. 6th, 7th, 8th days—Light exercise. Recovery.—(*Gaz. Med. Vet. Mad.*)

STATISTICS.—From the *El Castellano* the following shows the number of animals actually in Spain: Horses, 397,372; mules, 767,929; donkeys, 753,914; bovines, 2,217,659; ovines, 13,359,482; goats, 2,534,219; swine, 1,927,864; total, 21,960,430.

ITALIAN REVIEW.

ARECOLINE IN THE GASTRO-INTESTINAL AFFECTIONS OF HORSES AND CATTLE.—*Il Moderno Zoviatro* contains from the pen of Dr. Umberto de Maia the record of three cases of those affections (two in horses, one in a cow), where he minutely describes the effects he has observed of the subcutaneous injection of 8 centigrammes of arecoline in 3½ and 4 grammes of water in those animals, and from his observations concludes: 1st, arecoline is not as powerful sialagogue as pilocarpine; the salivary seeretion is not as strong as with this last alkaloid, it does not last as long; 2d, the laxative action is eight times superior to that of pilocarpine; in horses, it is not accompanied with pains; 3d, the cardiac depression is very weak; once only was the pulse lowered to 28; 4th, arecoline can be used against gastric and intestinal indigestion, gastric catarrh and indigestion of the omasum; for this last, whether acute or chronic, the injection must be of 6, 8 and 10 centigrammes, repeated daily until recovery, or even twice or four times a day in doses of 3, 4 or 5 centigrammes.

ACTINOMYCOSIS IN A LIZARD.—The *Ufficio Sanitaria* contains a note from Dr. Ferni, who has found in a green lizard, greyish hepatic nodules, formed of pus and ramified threads. The character of their cultures are those of the actinomycosis bovis, of which they may be considered a variety. These cultures were inoculated to other lizards and gave rise to the same lesions.

STATISTICS OF THE DOMESTIC ANIMALS IN ITALY AND THE VALUE THEY REPRESENT.—From an approximate estimate of the general directors of Agriculture the number of domestic animals in Italy is represented as follows: Horses, 720,000; donkeys, 1,000,000; mules, 300,000; bovines, 5,000,000; ovines,

6,900,000; caprines, 1,800,000; swine, 1,800,000. They are estimated at a value of 2,191,200,000 lire, viz.: Horses, at 600 lire a head, 432,000,000 lire; donkeys, at 50, 50,000,000 lire; mules, at 400, 120,000,000 lire; bovines, at 275, 1,275,000,000 lire; ovines, at 12, 82,000,000 lire; caprines, at 13, 23,000,000 lire; swine, at 60, 188,000,000.—(*Clin. Veter.*)

CASTRATION OF THE COW [*By Prof. Lanzilotti-Buonsanti*].—In the August number of the *Clinica Veterinaria*, which he edits and has published for nineteen years, the professor records the success he has obtained with this operation, and expresses the idea that he hopes to see soon the operation occupy in veterinary surgery the rank it deserves by the great advantages that can be derived from it. He has during the months of November to January, at the clinic of the Veterinary School of Milan, performed 12 castrations, all successfully. Some of these were laparotomies—that is, castration through the abdomen; nine were by the vaginal method. From the results obtained it seems that the last operation is undoubtedly the most advantageous and remains evidently the most scientific.

REVIEW OF BIOLOGY.

CONGENITAL IMMUNITY OF OVINE VARIOLA [*By Mr. Duclert*].—In his studies upon the disease, the author has met with subjects having an absolute or a relative immunity; these were born of ewes having had variola before conception. He then undertook experiments to prove the heredity of immunity in that disease. He used as witnesses, lambs three or four months old, born of unvaccinated mothers, comparatively with others of the same age but issued from immunized mothers. All were inoculated by hypodermic injection. While the former died with variola, the latter showed an absolute and a relative immunity; in this last condition the disease developed itself, but the animals recovered. In a small epidemic which had attacked a number of six-months old lambs issued of ewes vaccinated by a previous attack, the disease remained benignant; but was, however, more severe than in the three or four months old lambs inoculated experimentally. Congenital immunity seems thus only temporary in variola.—(*Soc. of Biol.*)

PREVENTIVE AND CURATIVE SERUM OF VARIOLA [*By the same*].—The author has recently shown that immunity is hereditary in variola ovina. This weak receptivity has seemed to him

due to the property of the serum. Indeed, he has taken serum from animals that had resisted serious attacks of the disease, ten or twelve months before. During sixteen days, by daily doses, he injects to four lambs a total quantity of 190 cubic centimetres, and then ½ cubic centimetre of very active variola virus. These lambs had no eruption, while a witness, which received the same quantity of virus, died of variola. The serum there acted as a preventive, but the granted immunity was only temporary. In another series of experiments, six lambs received a subcutaneous injection of active virus. When the skin began to redden and to be œdematous at the point of inoculation, daily injections of serum are made. The evolution of the disease diminishes and is arrested; the tumor goes down, and a large slough takes place, which is eliminated by granulation. There was no indication of generalization. A witness lamb, inoculated and received no serum, contracted a variola, generalized to all the skin. Then the serum cures; but the first injection must be made as soon as the apparition of the local manifestations of inoculation. If the local accident is too extensive or if the virulent agent has invaded the whole organism, the serum remains powerless.—(*Ibid.*)

Effects of Mallein After Injection in the Portal System [*By MM. Teissier and Guinard*].—The authors were the first to show that the effects of some microbian toxines, in particular those of pneumobacilline and of the diphtheric-toxine were increased by their immediate passage through the liver. They have continued their experiments, in using the dog as subject, and in employing mallein and tuberculin. The demonstration is still more marked; as the difference observed in the manifestations is here caused by the longer life of the animal witness to which the toxic had been injected in the jugular vein.—(*Ibid.*)

THERAPEUTIC REVIEW.

Stability of the Solutions of Iodide of Potassium or of Sodium [*By Mr. Carles*].—To preserve the stability of these solutions which, with age, become more or less yellow, the author proposed to add to the solutions a little hyposulphite of soda, as follows:

℞ Iodide of potassium, 10 grammes.
Hyposulphite of sodæ, 0.05 centig.
Distilled water, 200 grammes.

New Antipyretic Formula:

℞ Chloryhydrate of quinine, 3 grammes.
Antipyrine, 6 "
Distilled water, 10 "
For one subcutaneous injection in the horse.

For Local Anæsthesia:

℞ Antipyrine, 5 grammes.
Muriate of cocaine, 0.50 to 1 "
Distilled water, 10 "
For one injection under the skin of the field of operation.

Electuary for the Stomachal Catarrh of Horses:

℞ Calomel, 3 grammes.
Powdered rhubarb root, 12 "
Extract of aloes, 10 "
Bicarbon. of soda, 10 "
M. et fiat electuarium. Sig. To be given in one dose.

—(*Bullet. Veterin.*)

TREATMENT OF CHICKEN CHOLERA [*By Dr. Rosolino*].—1st. Injection under the skin of the chest of 3 c.c. of the following solution:

℞ Bromohydrate of quinine, 3 grammes.
Antipyrine, 6 "
Distilled water, 100 "

2d. Disinfect the hen-houses with sulphuric acid in solution of 1 pr. 500.

3d. Give to healthy animals for two days, 25 centigrammes of salicylate of soda in flour.

Out of six very sick hens, having received the first part of the treatment, but one died. In the others all indications of sickness had subsided in four or five hours.

NALACINE.—It is a salicylate of para-phenethydine, that is a phenacetine in which the aldehyde salicylic takes the place of the acetic acid. It possesses powerful antineuralgical and antirheumatismal properties. It is superior to salicylate of soda, as being less depressive and better supported by the stomach. It is given in man in doses of 3 to 5 grammes a day.

TANNALBINE. — An amorphous pulverulent substance of yellow color, tasteless, obtained from the albuminate of tannin, heated to high temperature. It is recommended in dogs, 1 gramme dose, 2 or 3 times a day, against acute or chronic diarrhœa. It does not disturb the stomach.—(*M. Kaufmann.*)

A THREE-DAY MEETING ought to be sufficient time in which to read and discuss a great many scientific papers, but at the last session of the U.S.V.M.A. a large number of them had to be read by title only, so much of the time of the Association being taken up with routine business.

BIBLIOGRAPHY.

PATHOLOGIE INTERNE DES ANIMAUX DOMESTIQUES (Internal Pathology of Domestic Animals). Vols. VIII. and IX. of Cadeac's Encyclopedia. Paris: J. B. Bailliere et fils, Rue Hautefeuille.

These two volumes form the first two parts of the internal pathology, which is to occupy six volumes in the encyclopedia of Cadeac. These treat of the diseases of the digestive apparatus proper—viz., the digestive tract from the mouth to the posterior end of the pelvic contents. The classification adopted by the author presents some advantages, but is not without inconvenience. Diseases are studied successively in each of the species, and each disease is considered to the point of view of the etiology, pathology, symptoms, lesions, etc. Vol. VIII. considers the affections of the anterior regions of the digestive apparatus from the mouth to the intestines, viz., the diseases of the mouth, of the parotid, maxillary and sublingual glands, gutteral pouches, œsophagus, jabot, rumen, reticulum, omasum, and stomach. In Vol. IX. the diseases of the intestines are examined: intestinal congestion, enteritis, ruptures, abscesses, obstruction, foreign bodies, tumors, parasites. The two volumes form a number of chapters, which are subdivided into various numbers of articles, in which are studied the various forms the diseases may present in each of our domestic species, including fowls. Both volumes are illustrated by a large number of wood cuts, 61 in the eighth and 78 in the ninth, which add considerably to the demonstrations. Beginning of a work on internal pathology, they are well up with their predecessors; they contain lots of information, and recommend themselves for real qualities which cannot escape the attentive reader.

PATHOLOGIE INTERNE DES ANIMAUX DOMESTIQUES (Internal Pathology of Domestic Animals). Vols. X. and XI. of Cadeac's Encyclopedia. Paris: J. B. Bailliere et fils, Rue Hautefeuille.

In previous issues we have considered the successive portions of this encyclopedia, so regularly and uniformly published by the house of J. B. Bailliere et fils, of Paris. The last two volumes, published almost together, continue the series of internal affections, concluding the diseases of the liver, peritoneum, nasal fossæ, and sinuses in Vol. X, and the diseases of the larynx, trachea, bronchia, and lungs in Vol. XI. They conserve the uniform appearance that each work of the encyclopedia offers, almost even to the number of pages, and both contain a large number of neatly made woodcuts. In Vol. X. we find five

chapters in which the diseases of the rectum, pancreas, liver, diabetes, hepatitis, atrophy, parasites, splenitis, peritonitis, followed by those of the diaphragmatic region and the affections of the nasal fossæ and of the sinuses. Vol. XI. contains only four chapters, with the various forms of laryngitis, tracheitis, bronchites, and lung diseases. These chapters are subdivided into articles treating of the special affections of the principal organs, the foreign bodies, tumors and parasites. In this volume the diseases of the lungs proper occupy the greater part of the book, and the various forms of pneumonia receive the attention they deserve under the various titles of lobular pneumonia, broncho-pneumonia, pleuro-pneumonia, corn-stalk disease, parasitic broncho-pneumonia. Following a plan which has been adopted by the author, and which has been followed in the two preceding volumes, the description of the diseases include not only those that are met with in solipeds, but in all the domestic animals. The section of internal pathology of the encyclopedia is a true treatise on comparative pathology. With the extent which is given so far in the work, and which certainly will be continued by Prof. Cadeac, it is doubtful if the next two volumes will be sufficient to treat of the remaining subjects, the circulation and innervation, as it was intended in the original programme.

COMPEND OF VETERINARY MATERIA MEDICA AND THERAPEUTICS, by A. C. Hassloch, V.S., late Lecturer on Materia Medica and Therapeutics at the New York College of Veterinary Surgeons. New York: W. R. Jenkins, 851-853 Sixth Ave.

The author of this neat little volume has succeeded in presenting to the veterinary profession a short but comprehensive work embracing the most commonly used veterinary drugs, freely admitting that he has obtained the most important facts from the standard authors, but they are presented in a manner that only experience in active practice would dictate. It will therefore prove a work of great benefit for busy practitioners and for students reviewing this branch of their studies. It is very intelligently classified, and a copious index is of great assistance to the reader. We very heartily recommend the book, and think it should find a welcome place on the shelf of every veterinary library in the country.

HORSES IN THE UNITED STATES.—There are now in the United States nearly 16,000,000 horses. The REVIEW will publish a detailed statement of their location, and the effects of the present depression upon their numbers next month.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting of this Association was called to order at 8:30 P. M., Oct. 7th, by the President, Dr. Huidekoper, at the Academy of Medicine.

The following members responded to the roll-call: Drs. Delaney, Dair, Ellis, Giffen, Gill, Huidekoper, Hanson, Loomes, Machan, MacKellar, Neher, Robertson, and Rider.

The minutes of the previous meeting were read and approved.

It was moved, seconded, and carried that the report of the Board of Censors (Dr. H. D. Gill, Chairman) be voted on in sections as follows; Section 1, Johnson's case; section 2, Ferster's case; section 3, Glover's case; section 4, recommendations to be presented by the chair to Judiciary Committee.

The report of the Board of Censors was as follows:

Dr. S. K. Johnson's Case.—The charge against Dr. S. K. Johnson for breach of Article VII of Code of Ethics was referred back to the Association, for the reason that the Board of Censors had no jurisdiction, as a motion relative to the case had been passed at a meeting held April 7, 1896, which was as follows: *Resolved*, That the Board of Censors recommend to the Association that if the said Dr. S. K. Johnson does not show satisfactory evidence of having resigned and severed all connection directly or indirectly with the said insurance company on or before October 15th, 1896, he be expelled as a member of this Association. Moved and seconded that the report be accepted. Carried.

Dr. J. H. Ferster's Case.—The acceptance of Dr. J. H. Ferster's resignation was, at the last meeting, laid on the table. The Board of Censors finds that Dr. Ferster at the date of his resignation was in good standing, and therefore recommends the acceptance of the same. Moved and seconded that the report be accepted. Carried.

Dr. H. Clay Glover's Case.—The charges against Dr. H. Clay Glover were for a breach of Article VI of Code of Ethics, and the improper and illegal use of the title "D.V.S.," and he was recommended to the Association for expulsion, and they also suggest that the attention of our Judiciary Committee be called to the latter fact. Moved and seconded that the report be accepted. Carried.

Information having come to the Board of Censors that Meat Inspectors employed by the New York City Health Department and the Bureau of Animal Industry, were not veterinarians, and consequently illegally practicing, the matter was referred to the Judiciary Committee for immediate action.

Dr. W. Herbert Lowe, of New Jersey, read a very excellent and carefully prepared paper on "Heredity."*

The discussion was opened by Dr. Hanson, and followed by Drs. Gill, Neher and others.

Moved by Dr. Hanson, and seconded by Dr. Robertson, that a vote of thanks be extended to Dr. Lowe for his paper and the interest shown in the Association. Carried.

The Board of Health Committee (Dr. Robertson, Chairman) reported progress. The committee was then directed by the chair to continue for another month, and report in writing at the next meeting.

The following gentlemen presented applications for membership in the Association: F. E. Winslow, of Flushing, L. I., and W. H. Wright, of Long Island City.

Moved and seconded that a vote of thanks be extended to visiting members for their courtesy in accepting the Association's invitation to be present at the meeting. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D.V.S., *Secretary.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The Keystone Association resumed its regular monthly meetings in room No. 1, third floor, northwest corner of Broad and Filbert Streets, Philadelphia, on Tuesday, Sept. 8, 1896, with President Hart in the chair.

The committee on certificates reported progress, saying all suggestions had been harmoniously decided upon and the certificates would be ready for delivery at the October meeting.

Drs. Hart and Hoskins gave a most gratifying report of the U.S.V.M.A. meeting at Buffalo, with a brief summary of the programme and recital of the great hospitality enjoyed. It was with keen regret that many voiced their disappointment at not having been able to be present.

Dr. Hart appointed Drs. F. S. Allen and W. H. Hoskins a committee on entertainment, and a full winter's work was planned for. The October meeting will be favored with a paper

* Printed elsewhere in this issue.

by Dr. Hoskins on "Some Aspects of Association Work in the Future." The first paper in the series of half-hour talks, a plan inaugurated by the association for the entertainment of its members and guests during the coming season, will be by Dr. J. Cheston Morris, member of the Devon Cattle Club, on some thoughts and statistics in dairy products, personal experience in the proper preparation of milk for sale in the markets, and the value of separate products of milk.

A number of cases were reported, among which probably the greatest anomaly was reported by Dr. Hoskins. It was that of a male Angora cat, recently castrated and placed in his sanitarium for completion of recovery, subsequent to operation. Subject extremely anæmic, with complete anorexia, during a period of two weeks eating nothing but a few spoonfuls of milk, refusing every other kind of food. The animal was listless, lying invariably on the right broadside. A fœtid diarrhœa preceded death a short time. *Diagnosis.*—Pernicious anæmia. *Treatment.*—All kinds of food, milk, eggs, fish, meats (cooked and uncooked), tonics, pepsin, iron, and nux. *Autopsy.*—Heart in abnormal position, resting against right thoracic wall, remnants of right lung only. Left lung divided into five lobes, firmly attached to spinal column; each lobe divided in its entirety; partially developed diaphragm; large omentum increased in size, estimated as one-half; very thick and embedded with small wax-like deposits, somewhat resembling miliary tubercles. Omentum extended to the thoracic cavity and appeared to aid in sustaining the heart, in place of pleura folds of mediastinum. Liver displaced and very much like a horse chestnut in shape; very dark in color and rough on its exterior, situated almost entirely on right side of abdomen and resting against internal abdominal wall. All other organs very pale and waxy in color, but otherwise normal in appearance.

Delegates were appointed to the Pennsylvania State Association meeting, at Reading, on October 8.

W. L. RHOADS, *Sec'y.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The thirty-seventh regular meeting of this Association was held at the Continental Hotel, 850 Broad Street, Newark, Oct. 8th, 1896.

The meeting was called to order at 11 o'clock, the President in the chair, 16 members being present.

After the minutes of the previous meeting were read and approved, Dr. Lawes, of Red Bank, read a paper on "Tetanus,"* which was discussed by nearly all present.

The President then requested the Secretary to read a paper relating to the actions of some of the members of local societies for the prevention of cruelty to animals. The discussion on this paper lasted until 2 o'clock, when dinner was announced.

Meeting reconvened at 3.30 o'clock.

It was moved and seconded that Dr. Hawks' paper be adopted and spread upon the minutes of the Association. Carried.

The Secretary then read a number of telegrams and letters of regret from members and others who could not be present.

The remainder of the afternoon was devoted to reporting cases, all agreeing that this was one of the best meetings held by this Association.

The President appointed Doctors Dustan, Gerth and Arrowsmith to read essays at the next meeting, to be held in Newark in April.

After adjournment many of the members accepted the invitation of Dr. Connelly to visit the bacteriological station at the City Hospital, and witness the mode of inoculating horses for the propagation of antitoxine serum.

S. LOCKWOOD, *Sec'y.*

NEW HAMPSHIRE VETERINARY MEDICAL ASSOCIATION.

The twelfth meeting was held at Concord, Sept. 1st, 1896, with President Dr. Lilico in the chair. Drs. Lilico, Russell, Wilkinson, Macguire, Abbott and Tuttle responded to the roll. Dr. Ebbitt, of Omaha, Nebraska, was present as a guest.

A letter from the Pasteur Memorial Fund Committee was read, and it was voted to appropriate five dollars from the treasury for this purpose.

Dr. Lilico, of the Legislative Committee, stated that the committee had no report as yet, but that it would be read at the December meeting.

Dr. Lilico read a most interesting paper on "Colic," which was followed by discussion.

Dr. Ebbitt, of Nebraska, kindly offered a few remarks, and brought out new points, which were very interesting.

Meeting adjourned at 1.30 until December.

L. E. TUTTLE, M.D.V., *Sec'y pro tem.*

* Printed elsewhere in this issue.

CHICAGO VETERINARY SOCIETY.

Thirty-three veterinarians of Chicago responded to invitations of a temporary committee, and assembled in the Sherman House, October 13, to organize the Chicago Veterinary Society. The gathering was representative of the leading practitioners of the city, of the faculties of the colleges, and of the local branch of the Bureau of Animal Industry. The officers elected are: R. G. Walker, President; O. S. Dyson, First Vice-President; J. Henderson, Second Vice-President; R. E. Fish, Third Vice-President; L. Campbell, Secretary; G. E. McEvers, Treasurer. There was a lively discussion in regard to a proper name for the society, several titles being suggested, but the choice finally fell upon the simple name, Chicago Veterinary Society. A constitution and by-laws were accepted, which were largely copied from the Illinois State Veterinary Medical Association, and which contain a well-defined code of ethics. The aim of the society is to arouse and maintain a collegial feeling between the members, and to aid in municipal, State and National legislation. The society will hold its regular monthly meetings every second Thursday evening, in the Sherman House, Chicago.

ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY.

The Veterinary Medical Society in connection with the Ontario Veterinary College held its first meeting of the session 1896–97 for the reading and discussion of papers, in the lecture hall of the college on Friday evening, Oct. 16th.

Prof. Smith, F.R.C.V.S., Principal, presided. There was a good attendance of students. The Chairman in opening the meeting made a few well chosen remarks announcing the objects of the meetings and the benefits to be derived from a free discussion and interchange of views on the papers submitted.

The following papers were read: *Essays.*—"Crotalism," a disease affecting the horse, produced by a plant called the "rattle box" (*Crotalarium Sagittatis*), which possesses narcotic properties, by Mr. G. P. Statters; "Laminitis," by Mr. C. H. Bugbee.

Communications.—"Azoturia," by Mr. T. J. Cooper; "Inversion of the Uterus," by Mr. C. W. Clark.

The papers were well received and were listened to with marked attention, and at the close of each paper very valuable and instructive discussions ensued.

THE MISSOURI VALLEY VETERINARY ASSOCIATION held its quarterly meeting in Kansas City on October 7th, and was well attended.

Dr. F. W. Hopkins read a very interesting paper about "The Veterinary Profession"; Dr. R. H. Harrison presented a paper discussing "Comparative Pathology"; Dr. E. L. Day read a paper entitled "Surgical Repair," which brought out an animated discussion.

Dr. Stewart gave a talk on his impressions of the Buffalo meeting of the U. S. V. M. A., not forgetting the story about "wanted to see the fellow's jaw work." The Association will hold its next meeting in Kansas City, December 9th. S. S.

CORRESPONDENCE.

HORSESHOEING.

CUBA, OHIO, Oct. 1, 1896.

Editors American Veterinary Review:

In the May issue of your valuable journal, I noticed an article on horseshoeing by Dr. E. L. Morgenroth, also one in the August number by Dr. F. O. Richmond, in which they say said articles were written to get the expression of the veterinary profession on the very important subject of horseshoeing. Feeling I should like to offer my opinion on this subject, I will say I do not know how to do so better than to submit an article for your publication written by myself in competition for a cash prize offered by the *Blacksmith and Wheelwright* (a periodical published in the interest of the shoeing fraternity), said article receiving a special cash prize from the Bryden Horseshoe Co., Catasauqua, Pa., and from whom I have permission for you to publish the article, should you think it worthy of a place in a journal published exclusively in the interest of higher veterinary education. Said article was written from a veterinary standpoint and in answer to three questions propounded by said company, which were as follows:

1st. Which is best for horseshoeing, iron or steel?

2d. Should horses be shod with same weight of shoe fore and hind? If not, why not?

3d. Is the wide-web front shoe of any advantage to the foot? Is not the narrow-web front shoe growing in favor?

ARTICLE.

In entering the competition for the cash prize offered in the

Blacksmith and Wheelwright, I would say, experience shows that in the present state of the domestication of our faithful friend, the horse, and the condition of our macadamized public highways, it has become necessary to look about us for some mechanical protection for the horse's foot. In studying the foot we perceive the lower border of the wall is the part most deeply concerned in resisting wear and strain in the unshod state, as on it the stress chiefly falls. It is, consequently, the portion of the hoof that suffers most severely from undue wear, and that which alone requires protection. What we should strive to do is to imitate nature in trying to supply this want. In my opinion, a light, narrow band perfectly fitted to the wall, leaving the sole and frog in contact with the ground (where nature intended them to be), comes the nearest to filling all the requirements of a perfect shoe.

In answering the first question as to relative value of iron and steel, I would say that my experience goes to strengthen the assertion of Prof. George Fleming in his work on "Practical Horseshoeing," where he says: "There can scarcely be a doubt that anything more simple and efficient, and at the same time less expensive than a well-devised iron shoe can at present be produced." I am in favor of iron for the reason that it is less expensive, does not become so smooth by wear, therefore to a certain extent does away with one of the greatest curses of the present age (toe and heel calkings); wears as long as any horse ought to carry a shoe, say three or four weeks, and in my experience fills every requirement.

In regard to the second question, "Should horses be shod with same weight shoes fore and hind?" my answer would be, yes. As I have said in answering the first question, the wall of the hoof should be encircled by a firm, iron band, no wider and no heavier than will protect the wall of the hoof for a period of three or four weeks. The fore shoe should be no heavier than the hind shoe, only that the fore foot, being larger than the hind one, it takes more iron to go around it and necessarily weighs more. The axiom, "An ounce on the foot weighs a pound at the shoulder," is undoubtedly practically correct, and many young animals are annually ruined by carrying burdensome chunks of iron on their feet, instead of being intelligently shod.

As to the third question, "Is the wide-web front shoe of any advantage to the foot?" In my opinion the answer must be, no; not if the narrow web is sufficiently thick and strong to protect the wall, which I have endeavored to show is all that

needs protection. We must bear in mind that shoeing is necessarily an evil. It is only an effort to supply a protection to the parts that have been worn away by our unnatural treatment of the foot, therefore we must not cover up or burden any more of the foot than is absolutely necessary to protect the parts worn away. The narrow-web is light and efficient, and if properly applied fills every requirement, and does not burden the foot. In our professional duties our attention is almost daily called to bruises of the sole caused by some foreign substance becoming lodged between the broad-webbed shoe and the sole, thereby causing a very formidable and dangerous wound, which ofttimes, if not properly attended to, causes tetanus from septic absorption.

In regard to the question, "Is not the narrow-webbed shoe becoming in favor in your locality?" I would say, emphatically yes! Why? I know no other reason than that the American people are becoming more enlightened, and are recognizing the fact that their pecuniary interest demands sound reasoning on this subject. The country is being filled with intelligent, practical veterinarians who are able to reason these questions from a scientific standpoint, thereby doing away with superstitions and causing the smith to be a practical, thinking man, that can handle the foot of the horse in a way becoming the present age. But a short time ago I was called to examine the driving mare of a very practical physician, for an unaccounted for lameness. After locating the trouble, I advised shoeing her in a certain way, which was done. In conversation with me on the subject some time after, he said, "It is quite probable that I will have to admit that merely nailing a chunk of iron on a horse's foot is not shoeing him." What we want is practical skill in shoeing horses, and not superstition and ignorance. Allow me to quote Prof. Fleming again to justify my position concerning narrow-webbed shoes. He says: "It must be laid down as a rule in farriery, and from which there must be no departure, that the sole of the foot is a part not to be interfered with on any pretense so long as the foot is in health, not even the flakes are to be disturbed; it should ever most strenuously be insisted upon that the whole lower face of the hoof, excepting the border of the wall, must be left in a state of nature; the horn of the sole, frog and base has an important duty to perform or fulfill; it is the natural protection of this part of the hoof, and no protection of iron, leather or other material is half so efficacious; in addition, it is a capital agent in sustaining weight, and making the

whole foot healthy and perfect in form." Gentlemen, it would be more than folly to persist in the use of the broad-webbed shoe after such argument, emanating from the source it does and backed by every-day experience. In conclusion I would say, after familiarizing myself with the anatomy and physiology of the horse's foot, and the almost daily perusal of Fleming, Zundel, Russell, Rich, Roberge and other scientific writers on the foot of the horse, and a practical experience of over 20 years in treating the various diseases of the feet, I am constrained to say that in my opinion, the light-weight, narrow-webbed iron shoe, mechanically applied, is the shoe. M. J. JONES, V.S.

AS TO NON-GRADUATES PRACTICING.

NEW YORK, Oct. 8, 1896.

Editors American Veterinary Review:

GENTLEMEN:—Will you kindly inform me through your invaluable paper how such men as ——, —— and some others are allowed to practice. Also inform me how a few gentlemen who have attended a college for four and five years and never graduated can practice and have cards printed to the effect that they are "Dr. So and So, Veterinarian." Is it not necessary to obtain a diploma? If not, I think those who have spent their money and time had better bring suit against the University of the State. This question has been a source of great annoyance to me, and if you will kindly solve it through your paper it will probably benefit others also. PROFESSIONAL.

[All practitioners of veterinary medicine in New York State are required to register; certain considerations gave them this privilege previous to a certain date, after which a diploma was necessary to register. Our correspondent should see if the names of the parties he complains of are upon the registry in the County Clerk's office. If they are not, he should make an affidavit before the Judiciary Committee of the Veterinary Medical Association of New York County, who have power to prosecute.—EDITOR.]

VERATRINE INJECTIONS IN MAMMITIS.

BATON ROUGE, LA., July 20, 1896.

Editors American Veterinary Review:

GENTLEMEN:—In looking over the July issue of the REVIEW, I observe among the extracts from foreign journals, one from the French, by M. Detchevers, recommending the hypodermic injection of veratrine in the treatment of mammitis in

the cow, and in the following solution: "Veratrine, 40 centigrammes; alcohol, a few drops; distilled water, 10 grammes. The injection can be renewed if the fever returns."

I had a cow suffering from a severe attack of mammitis, and to which I administered the above solution. My patient was dead in less than three-quarters of an hour, after exhibiting all the symptoms of veratrine poisoning. My object in alluding to this subject is to try to prevent others from falling into the same trap. I considered the dose a large one, but as the author of the article gives distinct instructions for the preparation of the solution, and then says as distinctly that "the injection can be renewed if the fever returns," I had no hesitancy in trying the quantity given, but with the untoward result just recorded. I think most practitioners are always ready to give a trial to methods and medicinal agents which are recommended by authorities in the profession, but if we are to be guided by extracts in our journals, those extracts should be explicit in every particular, so that the information they are desired to convey would be unmistakable. If the solution above referred to was not meant to be administered in one dose, the proper dose ought to have been stated, but the directions assuredly read as if the formula given was for one dose.

Mammitis in the cow is a condition occurring frequently in the practice of almost every veterinarian, and if some of them are led into making a similar error in using M. Detchevers veratrine solution, they undoubtedly will have some fatalities from veratrine poisoning to record.

I can perhaps scarcely excuse myself for not being more conversant with the proper dose of such a powerful drug as veratrine, but the text of the extract appeared so plain that I was inadvertently led into making the mistake. Respectfully,

W. H. DALRYMPLE.

[The abstract referred to by Dr. Dalrymple was correctly translated from the French, and the error belongs to the source from which the REVIEW obtained it. As confirmatory of this, Dr. Bieser, who so ably presides over "German Review," furnished us simultaneously with the French translation the identical article, which he had found in one of the most trustworthy German periodicals.—EDITOR.]

BOVINE TUBERCULOSIS IN SAN FRANCISCO.—It is stated that nearly fifty per cent. of San Francisco's dairy cows will have to be slaughtered to stamp out tuberculosis.—*Med. Re.*

NEWS AND ITEMS.

DR. FRANCIS ABELE, of Quincy, Mass., recently had his arm broken by being kicked by a horse, but is rapidly recovering.

DR. H. B. ADAIR, of Kansas City, Mo., recently received an appointment in the Bureau of Animal Industry and has been stationed at Milwaukee.

DR. MILNESS, of Cedar Rapids, Ia., and Dr. Don Patton, of Hampton, Ia., have been appointed as meat inspectors, and are located in Kansas City.

I. K. DECKARD, D.V.S., of Middletown, Pa.. was judge of horses at the fair of the York County (Pa.) Agricultural Society, held at York, Oct. 5th to 9th.

DR. H. J. MCCLELLAN, of Lansdowne, Pa., has, we understand, given up the practice of veterinary medicine and embarked in the real estate business.

THE annual election of officers of the V.M.A. of N. Y. Co. will take place the first Wednesday in December. All members should bear this in mind and be present.

THE first fall meeting of the Veterinary Medical Association of New York County was held at the Academy of Medicine in West 43d St., Wednesday, October 7th, at 8 P. M.

GEORGE H. BAILEY, D.V.S., State Veterinarian of Maine, had the misfortune to break his arm recently, and we regret that recovery is delayed by a complication, which may necessitate an operation.

FINANCE COMMITTEE OF THE U. S. V. M. A.—The following Finance Committee has been appointed for the ensuing year: Dr. W. Horace Hoskins (Chairman), Dr. J. B. Rayner, and Dr. S. Stewart.

THE AMERICAN HORSESHOERS' ASSOCIATION held a convention from Oct. 13 to 16, at the Park Avenue Hotel, New York City. A national organizer was appointed, and a general organization effected.

MARRIED.—Harri H. Dell, D.V.S., who graduated with honors at the last examination at McGill University, and has located at Sullivan, Ill., was married Sept. 30 to Miss L. E. Estelle Ratliffe, of Farmer City, Ill.

H. C. GLOVER, who has affixed the title "D. V. S." to his name while he registers by affidavit, was expelled from the N.

Y. C. V. M. A. He also sells patent medicines, both charges being contrary to the code of ethics.

WHAT has become of the Judiciary Committee of the V.M.A. of N. Y. County? Why don't they prosecute? Are they doing their duty? Members of the society, why don't you take them to account for the non-performance of duty?

PROF. W. L. WILLIAMS, late of Bozeman, Mont., writes from his new quarters in Ithaca, N. Y., that he is well satisfied with his change of location, and he feels that at Cornell University he has at last found the very field of work suitable to him.

DR. S. K. JOHNSON has been expelled from the County Society, on account of failing to sever his connection with a live stock insurance company, after several months' notice. Dr. Johnson is veterinarian to the company which treats horses free of charge.

PROF. A. LIAUTARD is back in his place at the American Veterinary College. During his trip abroad he obtained some new and beautiful slides of anatomical plates which when thrown on the canvas make anatomy comparatively simple for the student and aids him materially in dissecting.

PROF. LIAUTARD, who returned from Europe the latter part of September and resumed his important functions at the American Veterinary College with his old-time enthusiasm, is in excellent health, and appears to have discovered during his sojourn in sunny France the secret of perpetual youth.

THE next regular meeting of the Veterinary Medical Association of New York County will be held at the Academy of Medicine, 17 to 21 West 43d Street, near 5th Avenue, Wednesday, Nov. 4th, at 8 P. M. Veterinarians in counties adjacent to New York County are welcome to be present and join the Society.

ANSWER TO A CORRESPONDENT (H. H. M., MASSACHUSETTS.)—While the REVIEW solicits contributions from all legitimate members of the veterinary profession, the editors reserve the right to reject any which they are convinced are without merit. The communication in question is neither original, remarkable, nor interesting.

BOVINE TUBERCULOSIS IN NEW YORK CITY.—The board of health is making a thorough inspection of all milch cows kept within the city limits in order to exterminate tuberculosis. Of three hundred and eight animals which have been examined by

the tuberculin test fifty-two have been found diseased and have been killed.—*Medical Record.*

A VETERINARIAN AND HIS "WHEEL."—Several of the far-western veterinarians were stopping over in Chicago on their return from Buffalo. Dr. Reynolds, of Minnesota, spent there several days visiting his old friends, making a call on the colleges, and taking a spin on the Boulevards around the city upon his inseparable wheel which accompanied him throughout his vacation trip to Buffalo.

A FLOURISHING ASSOCIATION.—A monthly magazine called *The Livery Stable*, in its account of the meeting of the U. S. V. M. A., at Buffalo, says that eight hundred members were in attendance. If its scare at the popularity of the bicycle is based upon the same exaggeration of facts, those who earn their daily bread in various capacities around the historic soliped have but little to fear from that source.

SUCCESSFUL HORSE SHOW.—Kansas City held its second annual horse show September 5 to 12. The number and variety of exhibits was quite large and very encouraging to the management, so much so that a number of prizes for next year were announced on the closing day. The interest continued throughout, the attendance increasing with each day. Dr. R. C. Moore officiated as veterinarian for the show.

SERUM-THERAPY IN HOG CHOLERA.—Mr. Harold Sorby, the wide-awake manager of the Pasteur Vaccine Co., Chicago, upon hearing of the success of Dr. Peters' paper on "Serum-Therapy in Hog-Cholera," read at Buffalo, had immediately a consultation with the doctor with a view of a practical utilization of his researches. Who can tell if fortune is not to follow fame with these young scientific experimenters in veterinary bacteriology.

HORSE-SHOW VETERINARY LAW.—The following rule in reference to veterinary examinations of entries at the Madison Square Horse Show, which takes place this month, has just been promulgated by the governing committee: "The veterinary examination of all horses shall be conducted jointly by two of the association's veterinary surgeons. Should they disagree as to the soundness of a horse, the third shall be called in, whose decision shall be final."

W. H. DALRYMPLE, M.R.C.V.S., of Baton Rouge, La., read a paper on "The Care of Live Stock," before the North Louisiana Agricultural Association, at Calhoun, Sept. 18th, and inci-

dentally he gave a glowing account of his visit to the late meeting of the U.S.V.M.A. at Buffalo, and the efforts put forth to have the next meeting of the Association at Nashville, Tenn., claiming that this invasion of the Southern country by such a representative body of veterinarians would be of incalculable benefit to the cause of veterinary medicine below Mason and Dixon's Line.

ATTENDANCE AT WESTERN COLLEGES.—Reports indicate that the attendance of students at the Western veterinary colleges is very slight this year. This, however, appears to be equally the case with most of the medical and dental colleges, while it is a significant fact that all the educational departments of the large Western universities, notably those of engineering, are filled to overflowing with students. But this stagnation in professional colleges is natural enough if one considers the wild manner in which most of these colleges have been turning out their graduates during the last decade.

A BOOK ON POISONOUS PLANTS.—The Department of Agriculture at Washington is shortly to issue a large illustrated report on poisonous plants, and is making at present original analyses and tests of supposed poisonous plants with a view to accounting for the many mysterious deaths among domestic animals reported every summer from different sections of the United States. The study of poisonous plants and roots really belongs to hygiene, but as our American text-books on this subject contain only meagre reports, if any, the rural veterinary practitioner will heartily welcome such an authentic treatise.

HIGH PRAISE FROM HIGH AUTHORITY—A cultured veterinarian, whose good opinion the REVIEW is very jealous of, gave expression to the following comment in a recent letter, and although the letter was private, we take the liberty of reproducing it for the good it may do: "The REVIEW'S write up of the Buffalo Meeting was very complete, and must certainly prove highly pleasing and instructive to its readers. Such journalistic enterprise and ability cannot but add greatly to the popularity and growth of the REVIEW, and this report especially will greatly strengthen our Association. It certainly gave those members who did not attend a good idea of what they missed, and was so much enjoyed by all who were present. This report should bring you many letters of praise and congratulation."

A RESPECTER OF THE LAW.—Dr. Wm. Henry Kelly, Secretary of the State Board of Veterinary Examiners of New York, furnishes the REVIEW with the following correspondence, which explains itself (the names being omitted for obvious reasons): "*Regents' Office, Albany, N. Y., Sept. 17, 1896.—Mr.* ——: Dear Sir:—We are informed that you are violating the provisions of the inclosed veterinary law. Will you please give us the facts in this matter? Very truly yours, —— ——." To which the following reply was made: "Dear Sir:—I received a notice ingards of ackent a part of vetrinary. If it is me you mean it is not my name but I will answer it. If eny one has informed you of me Doctor horses it is not so. I have clipped a few horses and have floated some horses moths and if I have know right to do that will stop at once never gave any meadson to eny horse but my own. I would answer sooner but am in bussness in New York. and did not received Your note. Respectfilly Yours, —— ——."

NEW RULE ON INFECTED CATTLE.—A Washington dispatch says: "Notice is given by the Acting Secretary of Agriculture that cattle infected with Southern cattle ticks disseminate Texas fever, and that under the laws relating to the control of contagious and infectious diseases of animals the regulations of the Bureau of Animal Industry dated Feb. 1, 1896, are hereby amended by an additional section as follows: Cattle originating outside of the district described by the order dated Feb. 1, 1896, as amended by subsequent orders, and which are infected with the *boophilus bovis* ticks, shall be considered as infectious cattle and shall be subject to the rules and regulations governing the movement of Southern cattle. Stock-yard companies receiving such cattle shall place the same in the pens set aside for the use of Southern cattle and transportation companies are required to clean and disinfect all cars and vessels which have contained the same, according to the requirements of this department."

SWINE PLAGUE PREVALENT IN THE WEST.—Swine plague is pretty well disseminated this fall. There may be some States in the Central West where it is not rampant, but we do not know of them. It was supposed to be worst after a dry year; its outbreak now after the wettest year on recent record renders a new theory necessary. A late dispatch from Cincinnati gives some idea of the presence of the plague throughout the Ohio Valley: "The reports from the farmers in Ohio and Indiana of losses from hog cholera are alarming. The corn crop is very large, but the hogs are dying rapidly. The hog cholera has prevailed for some

weeks and during the last week the losses have not only increased in the infected districts, but the disease is becoming general throughout the Ohio Valley." The West is very little better. Scarcely a State fair grouud escaped an outbreak this fall. The visitation is particularly severe on farmers at this time when corn is so abundant and feeding cattle so scarce and high priced. In the face of such widespread devastation it ought not to be necessary to repeat the warning that every purchased pig should be quarantined on some out-of-the-way corner of the farm until danger of the disease developing has passed. Such precaution is the part of common prudence.—*Breeders' Gazette, Oct. 14.*

CRIMSON CLOVER HAIR BALLS IN HORSES.—The division of botany of the United States Department of Agriculture has recently investigated the cause of death of horses that have been allowed to feed on overripe crimson clover (*Trifolium incarnatum*), a species of clover recently introduced from Europe. The calyx of this clover is densely beset with stiff hairs, which at maturity become thick-walled, and doubtless, though not so stated by the department, the cellulose, constituting the young cell of which the hair is composed, is transformed into lignin, or some other substance indigestible for the horse. The surface of the hair is marked by sharp-pointed tubercles bent toward the apex. Taken into the stomach of the horse, these hairs form themselves into masses of a spherical shape. They are arranged with their bases toward the centre of the ball, this position being facilitated by the tubercles pointing toward the apex of the hair. When the balls reach a certain size, apparently in from a few days to several weeks, they pass into the intestines, where they form obstructions, causing intense suffering and death in a few hours following the appearance of the first symptoms. No bad effects are observed when the clover is eaten before the seed matures. The fatal effects have mainly occurred when the plants were allowed to fully ripen and the straw and refuse, after threshing, had been fed to the horses.—*Pittsburg Medical Review.*

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